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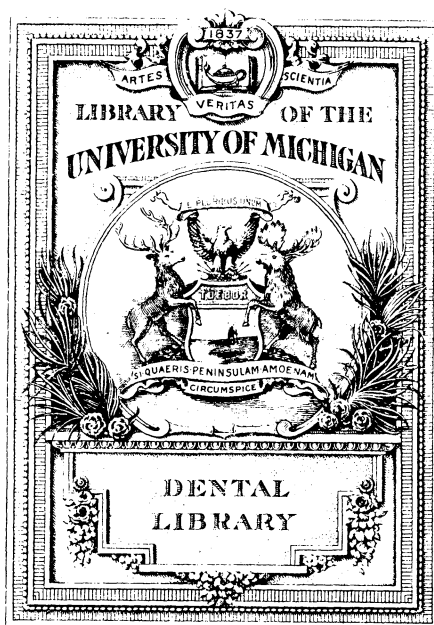
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LISTERINE

**The best antiseptic for
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A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many practitioners that Listerine is the best antiseptic to prescribe for daily use by the patient in the care and preservation of the teeth. The mild, stimulating effect of the free boric acid radical in Listerine is of the highest importance in maintaining a healthy equilibrium of the fluids of the oral cavity. At best, alkalies simply temporarily neutralize the acid-forming ferments which the carbohydrates of food produce in the mouth,—a true antiseptic prevents that fermentative change.

Literature will be forwarded upon request, containing a brief résumé of recent bacteriological investigations supporting the above argument.

Lambert Pharmacal Co.

St. Louis, U. S. A.

PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

PORCELAIN.

BY T. ELHANAN POWELL, D. D. S.

CHAPTER I.

All things change. Change is the universal law of progress. The rapid development of the dental profession is due to the operation of this law. Fortunately for the profession, her pioneers were ambitious and progressive, and we might even say radical men. This being true it logically follows that the radicals of to-day will in future years be looked upon as advocates of the things which best conserved the interests of the profession.

The filling of teeth is and ever will be the most important branch of dental art. The higher the efficiency attained, the nobler the profession, and the more useful are we as dentists to mankind. The more nearly we can approximate the absolute preservation of the teeth the more indispensable are we to the hygienic well being of the community.

Indeed, if we could use a radical prophylaxis which would bring immunity against the insidious operation of fermentation, filling would take a back seat. But the responsibility for preservation rests largely with the patient, as the average person rarely puts himself into the care of a dentist until caries is well advanced, and pain, that red light signal of immediate danger, has flashed its warning upon the senses in a most imperative way.

So it is pain to whom we are indebted for an introduction to most of our patients, and that means broken down enamel and dentin tissue, and we are at once brought face to face with the problem of restoration.

I am firmly of the opinion that the inlay method of filling teeth is to be the method of the future. Gold and amalgam are both excellent filling materials with records which, were they but

Editor's Note.—This is the first of a series of articles on Porcelain by Dr. Powell, who will deal with the subject in such a manner as to enable any dentist to use porcelain in his practice without having had any previous instruction in the art.

sentient things, would cause them to swell with a sense of importance and pride; for many thousands of teeth have been preserved to mankind and made to do valiant service with these metals. So, long may they live to help the poor, "average" dentist to continue to make himself indispensable to the "average" clientele.

But, after acknowledging our obligation to gold and amalgam fillings we must not rest there; we must in the future continue to advance as in the past. Excelsior is and should be the watchword for the dental profession. We must keep up the gait with our ideals among the stars, even though our feet touch the ground.

Lincoln when a young man was asked in a spirit of railery, "How long should a man's legs be?" After a few moments of deliberation, conscious of the fact that the length of his own legs had called forth the question, Abe replied: "Well, I don't know but it looks to me that they ought to be long enough to let his feet touch the ground." Make the application for yourself.

But, you say, "What is the man talking about?" I'm comin', Boss, I'm comin', as the darkey said to the guest at the cafe. I'm coming to porcelain, of course, and I want to have a "heart to heart" talk with you on that subject, because it is the subject of the hour.

Porcelain is of equal importance with gold inlay work and is certainly of much more importance than amalgam. And while it does not dispossess either of the other materials, it does have them beaten to a standstill on many important points. While gold is not discarded in my practice, I have adopted porcelain as its working mate. Using them as a team I have been able to pull my practice out of many a hard hole.

We must not forget the difference in temperament of these two good servants. In order to drive a team successfully, one must know his horses. Of course, you do know this "dun" horse thoroughly, he has your confidence, because you have found from experience that if you "put him right" he will "stay put," filling his place against all comers, until storm and stress of hard work ends his usefulness.

But what of this "white" one? Well, that is different. He is a thoroughbred; no blows for him, you must coax, and tease, and use every ounce of gray matter that God has given you to subject this one to your will.

It is like raising a child, you must master self; that is, learn technique if you would handle this white horse successfully.

But, if you are willing to do this and have the patience to carry the will into effect, then, O then, your team will be a joy unspeakable, filling your life and work with a continual and ever increasing satisfaction, which will not be yours alone, but will be shared by your clientele. You ask "If gold will save the teeth, why seek something else which is much more difficult to handle when there is so much difference of opinion about the practical value of porcelain anyhow?"

I shall give the Irishman's answer to that question. Suppose you were a manufacturer of artificial limbs and you have been making "peg legs" from time immemorial. The "peg legs" have answered the purpose to a very practical extent. They certainly enable men who are "shy" on legs to get around first rate. Of course, such a man is not eligible for entrance to the "Marathon" races but he can attend to any ordinary business, and the trousers cover the wood down to where the foot should be, but, everybody notices the absence of the foot and in walking the "stump, stump," can be heard for fully a half a block. Of course, this is disagreeable to a man of esthetic taste and some pride of person and such a one procures a "cork" leg which largely restores the shape of the lost limb and foot, relieving his embarrassment and enabling him to walk in a natural way, restoring his self respect and a proper equipoise among men.

Now, which method will you use as a manufacturer of artificial limbs? Make the "peg" leg for the man who can not afford the "cork," if you must; but if you are a sensible man and alive to your own interests, you will substitute the "cork" whenever it is possible.

Speaking of self respect: Do we fully appreciate the influence of personal appearance on character?

You remember the old saying, "The face is an index to the character." Imitating Mr. Delmas, for the moment, we'll ask the hypothetical question "Does the character produce the physiognomy, or does physiognomy produce the character?"

The story of "The Hunchback of Notre Dame" is familiar to all. Born with a face and figure which seemed to ally him with the devil, his life was consistent with the impression thus conveyed.

Who knows or can begin to tell the influence of seemingly trifling details of personal appearance?

Darwin's "Origin of Species" deals with the mysteries and influences of heredity; the smallest distinguishing feature being transmitted from one generation to another till each peculiarity becomes fixed and undeviating; then behold the birth of a species.

It seems almost ridiculous, perhaps, to discuss such a question in relation to filling teeth, and yet, right here obtains one of the deepest laws of the universe. Who can measure the possible influence of unnatural colors in filling materials on character, disposition and personal appearance.

Well, if there is a shadow of truth in this line of thought, it behooves us, as dentists to do all in our power to restore natural conditions.

So, I use amalgam under protest; gold, when I must; but talk and use porcelain wherever an opportunity offers and it is indicated.

If you do not use it, begin. If you have used it and are discouraged, work more carefully, but *work*; and this patient perseverance will not only bring proficiency in your porcelain work but will improve your technique all along the line.

There is much labor entailed in acquiring manipulative skill in any of the arts. Campanari, the great baritone, spent thirteen years in toil before he appeared before an audience and was then hissed off the stage. He did not despair, however, but continued to toil on to correct his deficiencies and he now enjoys the world's appreciative plaudits.

We must have the mechanical and the artistic instinct in order to succeed in our profession and above all we must have the love for work, natural or acquired. No man can reach the top without ideals and without a sane conception of the requirements for the attainment of those ideals.

(*To be continued.*)

ORTHODONTIA.

BY J. N. M'DOWELL, D. D. S.,

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CHAPTER XXII..

THE X-RAY—DESCRIPTION—ITS USE—MALFORMED, DELAYED, MISSING AND SUPERNUMERARY TEETH—METHOD OF TAKING—PREPARING PLATE—PLATES OF CASES.

The scientific value and use of the X-ray in all departments of surgery has been fully demonstrated the past few years, and at the

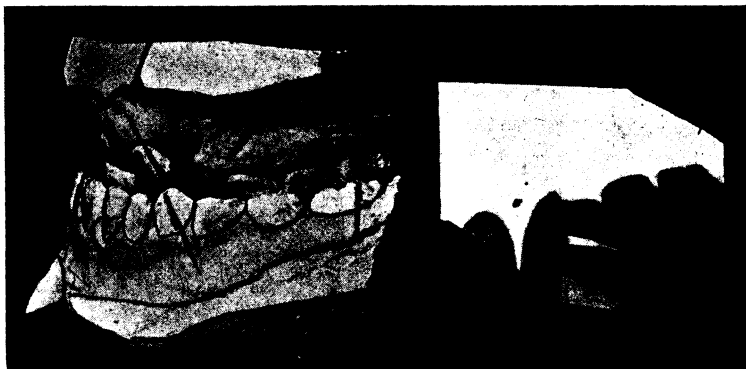


Fig. 1.

present date it takes its place along with the many other scientific achievements of the last century. The experimental age of the X-ray is now practically past and its use has become a necessity for the daily life of the medical and surgical world.

Description.—It is called X-ray because X represents the algebraic symbol of the unknown quantity. Hence X-ray, or the unknown ray. Such terms as skiagraph, Roentography, radiography, shadowgraph, etc., are considered appropriate terms. The result of

the X-ray is nothing more than a shadow of an object, hence the term shadowgraph seems to be the most appropriate, but the term skiagraph has been universally adopted.

Its use in dentistry for revealing conditions where the teeth are entirely missing or have failed to erupt; or for a correct diagnosis of supernumerary teeth, malformed roots, cystic formations, abscesses, etc., has proved to be very valuable. Every change in the occlusional contact as a result of delayed eruption, missing teeth, etc., is of vital importance when such conditions exist in cases considered for treatment, and especially when the condition is completely or partially hidden by the bony process they become perplexing. The influence of a missing tooth or the delayed eruption of a tooth, or a supernumerary tooth on the occlusion is twofold: (1) It alters more or less the position of all the teeth, causing a change in the occlusional contact. (2) If this condition is allowed to remain very long it becomes permanent and the probabilities are that it can never be restored to a normal condition.

Malformed, delayed or missing teeth usually work the most baneful results upon the occlusion of the teeth. When a tooth fails to erupt, and after examination there seems to be no indication of one, the usual instruction is to wait two or three years, thus establishing a permanent abnormal condition by the delay. Sometimes it is difficult to determine a temporary lateral from a permanent one. Sometimes a third well-developed tooth is erupted. And, again, sometimes one, two or three permanent teeth fail to erupt at the proper time and the question arises whether they have failed to develop entirely or are simply delayed in erupting. Just what course is best to pursue at such times is not always clear or satisfactory. By the use of the X-ray the course to follow is made clear, and by its use the old methods of lancing the tissues, packing in cotton, probing into the process and other uncertain methods have been more or less eliminated. If the conditions are known the advantage of early interference and treatment for the missing teeth, if in the upper arch, would be valuable, owing to the fact that the proper course of treatment could be carried out in the lower arch at the proper time. If a permanent tooth has been delayed by a temporary tooth, insufficient room, or its course changed by a supernumary, the conditions could be illustrated by the use of the X-ray and the cause removed. If there is

sufficient space and no interference by unnatural causes, permanent teeth will always erupt at the proper time. If, however, there is not sufficient space or there is interference of any kind, they usually erupt remote from the normal position or become imbedded in the process and are enveloped entirely by bone.

Supernumerary teeth should be removed at first appearance. If not certain of their identity—for some are hard to distinguish—the use of the X-ray usually supplies the necessary information.

Malformed permanent teeth, fortunately, are very rare. If by



Fig. 2.

the use of the X-ray they are found to be malformed permanent teeth, it is best to submit to the inevitable, unless they are monstrosities, when they should be extracted.

All of these four conditions just mentioned vary more or less the condition of treatment, according to the teeth, position, numbers and effects upon the occlusion.

While no two cases are alike as regards lack of development or malformation, their possibilities are all classified or outlined under four forms, and to facilitate the procedure of taking skiagraphs for this class of work in orthodontia, I have placed them in the order of their importance as effecting changes in the occlusion, as follows: *Missing Teeth, Delayed Eruption, Supernumerary Teeth and Abnormally Developed Permanent Teeth.*

Method of Taking.—In taking X-rays of the arm, head or different parts of the body, the photographic sensitive plate being incased in one or more covers of black paper impervious to light is placed

under or opposite the part it is desired to photograph, and the tube known as Crooke's tube is held above or opposite the part which it is desired to photograph. In taking X-rays of the teeth it was found impossible to cut glass sensitive plates to correctly fit the different parts of the mouth without the spoiling of many plates. To overcome this difficulty it was necessary to have something that could be easily cut and shaped to fit the mouth for each occasion and at the same time transmit light as a negative in making photographs. Celluloid prepared with sensitive chemicals has been found to answer this purpose best. No special preparation of the mouth in the way of washes, etc., is necessary, as the plate is protected by a covering.

Preparing Plate.—Cut a piece of cardboard to fit the part of the mouth that is to be photographed. In the darkroom lay the cardboard on the sensitive celluloid plate and cut to the same shape.



Fig. 3.

This is then wrapped in black paper to protect the plate from light and the moisture of the mouth. The head is so placed as to be immovable and the sensitive celluloid placed in the mouth directly back of the teeth to be taken. The usual time of exposure is from ten seconds to one minute, according to the machine used. The tube should be stationed some 6 to 8 inches above and in front of the teeth to be taken, in order to secure the outline of the roots. If the tube is held directly opposite the teeth the full length

of the roots are not taken, as the plate can not be inserted high enough, owing to the shape of the roof of the mouth.

Considering the classification, according to importance, we have:

(1) *Missing Teeth*.—The effect of a missing tooth upon the occlusion is the most aggravating condition met with, and at the same time the most uncertain we have to consider. In the treatment of malocclusion it is of the utmost importance that we have all of the teeth in the arches, if possible. In the young the position of the teeth is easily changed and we can more easily and with less pain aid nature in the development of the arches to accommodate all of the teeth in normal position. The loss of a tooth from lack of development or eruption can never be compensated by the use of an artificial tooth that will fill all the requirements necessary in the young, owing to the



Fig. 4.

fact that physiological changes are constantly going on up to maturity. Hence the importance of knowing whether a tooth has simply failed to erupt from lack of space, coming down malpositioned some time later in life, or whether it has failed entirely to develop. Each condition modifies the treatment.

Fig. 1 shows a case where the lateral is missing, the result of a cleft palate. The complete collapse of the upper arch is undoubtedly due to both the previous condition and operation. To be certain of the condition before broadening the arch and alignment of the teeth, a skiagraph was taken of the case. The skiagraph shows that the cleft extends directly through the process, the first and second bicuspid and cuspid are developing and the temporary cuspid and lateral are in the process, but no sign of a permanent lateral. 'A', of Fig. 2,

shows the model and occlusion of the anterior teeth of a young lady aged 12. Both the upper laterals are missing, causing a decided contraction of the upper arch, and causing the lower, on account of the inharmony in the relation of the arches, to contract from the action of the muscles of the mouth and face and the force of the occlusion contact from mastication in an effort to conform with the upper. All the teeth were late in erupting, giving some hope that the laterals were delayed. In the treatment the teeth were aligned to normal, space being made for the laterals. (See B, Fig. 2.) After holding the space for one year with artificial teeth, a skiagraph was taken, which revealed the fact that there were no teeth in the alveolar process, the laterals having failed entirely to develop.

Fig. 3 shows the models of a young man age 23. The left temporary cuspid occupied the position of the left temporary lateral. This gentleman desired the tooth removed. A skiagraph was taken for a possible delayed lateral; the skiagraph shows that the permanent lateral has failed to develop.

Fig. 4 shows the models of a young lady, age 22, with lower temporary centrals in position. A skiagraph discloses the fact that the permanent centrals have not developed. This young lady was informed by several dentists that if she had the temporary teeth removed the permanent teeth would erupt.

(To be continued.)

TO CONTROL SALIVA.

An annoying operation to successfully perform is filling a lower third molar that can not, for half a minute at a time, be kept free from saliva. Such a case presented in a young lady, of highly nervous temperament, whose flow of saliva was excessive. Placing the dam was impracticable, and napkins placed in the mouth would almost immediately become saturated. This annoyance was overcome through the action of atrophin sulphate, a dose of which (1-120 grain) I had her take three-quarters of an hour before her next appointment. At that time I found the mouth very dry, though not uncomfortably so for the patient. This salt of atropin has a much better effect on the secretion than the ordinary alkaloid. Its manifestations last from four to five hours.—*H. Otis Logue, Stomatologist.*

DENTAL PATHOLOGY.

BY GEORGE W. COOK, B. S., D. D. S., CHICAGO, ILL.

DEAN OF DENTAL DEPARTMENT UNIVERSITY OF ILLINOIS; PROFESSOR
BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS; PRO-
FESSOR OF ORAL SURGERY, DEARBORN MEDICAL COLLEGE.

Since the investigations of Virchow and Max Schultz all biological phenomena, both in health and disease, are becoming more and more understood, as the result of investigations of the morphological as well as the physiological activities of cellular life. Therefore, the treatment of alveolar abscesses, as well as that of any other disease process, can only be accomplished when the true fundamental knowledge of cell activity is thoroughly studied. The onset of a disease process, like that of an alveolar abscess, involves tissue changes in three different kinds of cellular organizations of living forms. In the phenomena that make its appearance in certain forms of tissue changes, like that of inflammation, there appears an increased transudation of fluid from the hyperemic blood vessels, causing the lymphatic space of the tissue to become immediately filled with fluid; there is at once established an edematous condition in the tissue in which leucocytes transmigrate through the vessel walls, and they can be found manifesting their amoeboid movement in the interspaces of the cells of the tissue.

In many of the infectious processes the leucocytes attack and destroy the bacteria which are found in the lymphatic spaces, especially if these bacteria are of the coccus form. In alveolar abscesses, and especially those that are produced by the mild virulent forms of bacteria; if this condition goes on for any length of time there is a mild form of inflammation and the disorganization of the cellular tissue surrounding the apical end of the root of the teeth, and it may be weeks and even months before a true typical and well defined alveolar abscess is established; during the period from which the bacterial irritant has entered the field of liability of inflammation to the time that the tooth manifests all the signs and symptoms of the formation of an abscess.

Previous to the formation of an abscess, it may be possible that there are other conditions that appear in the nervous reflex of the parts adjacent to the tooth.

I cannot better illustrate this point than to relate to you a case of an upper cuspid tooth, the root canal of which has been filled for a great many years. Something like a year and a half or two years before the abscess had fully established its identity at the end of the root the patient suffered pain in a number of teeth in the upper jaw, some quite remote from the affected part. The tissue around the affected tooth was quite free from any painful condition, or even a slight soreness in the part at the end of the root, and almost before any symptoms appeared in this particular locality a fistulous opening had been established. The bacterial findings in the pus discharged was that of a staphylococcus and the bacillus of pulp gangrene. A microscopic examination of the tissue showed transmigrated leucocytes, some of which contained dead bacteria that were evidently destroyed through phagocytic action.

It frequently happens that these leucocytes pick up the bacteria that are in the lymph space and carry them to the lymph nodes, where the bacteria, provided their virulency is not too great, are destroyed and their effects completely lost. If such a condition goes on for any considerable time the connective tissue in the vicinity of the root of the tooth becomes very much impaired and is found to contain quantities of leucocytes, which are found to be somewhat in accordance with the degrees of inflammation in that particular tissue. The karyokinetic figures are very much increased, which Virchow considered to be due to a hyper-nutrition. But, as a matter of fact, the cells are not over-nourished, and the condition is the result of stimulation, which is probably due to certain chemical elements from the bacterial cells, or the liberation of certain chemical compounds from the tissue cells; these are designated as inflammatory exudates and vary in accordance with the severity of the inflammation, which is always variable in accordance with the reactivity of the tissue involved and the virulency of the bacteria present. The fibrin exudate found in such fluids is, as a rule, an indication of more or less acute activity of the tissue, which brings about a more or less fibrous coagulation, and is an indication of active de-

generation of certain cells. It might be said in this connection that certain fibrin ferment has been separated from bacterial culture. Of course, it is a difficult matter at this time to say positively whether this fibrous exudate is from the bacterial cells or not. Most likely, though, it is the result of certain ferments from the tissue cells.

In the degeneration of tissue cells, like that of an alveolar abscess, a microscopic examination showing the presence of erythrocytes is an indication that considerable destruction of the tissue has been going on, and that the blood vessels are more or less involved in the destructive changes. In this connection it might be well to mention that such destructive changes involve more or less of the peridental membrane, rather than a destruction in the bony tissue. In the majority of these cases the destructive process will go on along the side of the root and make its appearance externally at the neck of the tooth. Such a condition would indicate that there was present round cell infiltration and cellular exudation, with possibly the presence of pus. The cells may be few or many in number. They may be so few, however, that they can only be found by a careful microscopic examination; on the other hand, they may be numerous with a general liquefactive process, with necrosis of the tissue, and a formation of a large abscess cavity containing considerable pus. In such a case the polymorphous having many forms, leucocytes are usually present in considerable quantities, which, as a rule, is a favorable indication in the destructive changes of the tissue.

It sometimes happens that degenerative changes of the tissues surrounding the roots of the teeth take place in the manner above described, following the peridental membrane from the foci of irritation to the free margin of the gum; and the destructive change that is going on may bring about certain toxic conditions of the cells of the periosteum, there producing a general periostitis of the tissue in that vicinity. If the destructive inflammatory changes take place in the bony structure then our-wandering leucocytes invade the haversian system and the lacunae. If the pus formed in such tissue is of an acid character it will cause rapid destruction of the lime salts of the bone, and in a brief period there will be established a large abscess cavity which will involve considerable area of bone; and unless the action of the leucocytes is not energetic in their bacterial destruction the bacteria will follow deeper and deeper into the haver-

sian canals and lacunae, that the lymphatic system may become so extensively involved in carrying away living bacteria, that other and sometimes very remote parts of the body may be the seat of a destructive suppurative process. It has been my privilege to see a number of such abscesses result in very serious conditions. If the infectious material establishes a periostitis the area involved in inflammation and suppuration usually becomes circumscribed, and as a rule does not produce the extensive destructive changes as in the case where the bony structure is immediately involved independent of the periosteum. This reason can be accounted for, perhaps, because that the perostium is rich in blood supply and the leucocytes have a better opportunity to control the bacterial invasion.

Destructive processes may be said to exist perhaps in about three forms, acute, subacute and chronic alveolar abscesses, which are very much in accordance with the classifications of inflammation, such as is involved on other tissue. The acute stage of an alveolar abscess might be said to be one which is rapid in its onset and brief in duration, and is usually the result of the successful invasion of the tissue, beyond the apical end of the root, with various forms of bacteria. There may be a number of the organisms which are extremely variable in quantity and the kind present. I have yet the first alveolar abscess to examine for the bacteriological findings in which I did not find present the bacillus of pulp gangrene. As I have elsewhere stated, this bacterium is not, in the strictest sense of the word, a pathogenic germ, but is under certain circumstances capable of producing destructive processes in the tissue. So far as my observation goes the bacterium does not produce an acute inflammation but ordinarily brings about a slow degenerative process of the tissue, and if some other bacterium is present, like the streptococcus of staphylococcus form, it then seems to take, or, as I should more properly say, continue its principal role, which is that of liquefying dead organic material.

The staphylococcus that is usually found in the oral cavity is not ordinarily a very virulent organism, in fact, it may be said that the saliva from the individual in whom the physiological functions of the body is normal that, in the majority of instances, the bacteria lose a certain amount of their virulency when they are permitted to live in this fluid for any considerable length of time. If these bac-

terias, after living in what may be termed a normal saliva, are introduced into the apical space, where there has been no destructive changes other than that of a traumatic nature, it will very seldom happen that acute inflammation will be established of sufficient importance to produce any very serious symptoms. As a matter of fact, the severe abscesses that follow destructive degeneration of the pulp are the results of the tissue, around the roots of teeth, being involved in the absorption of certain toxic material that has been formed as the result of degeneration of the pulp tissue. Not only may it sometimes happen that the destruction of the pulp by bacteria produces local toxemia of the tissue cells on the vicinity of the tooth involved in the process, but many of these toxic materials may have an elective affinity for certain tissue cells and produce certain general conditions which may never be recognized as the result of this destructive process. But, suffice it to say, the bacteria that make their way to the apical end of the roots of the teeth through the degeneration of the pulp are more destructive in their tendencies and the tissue has less resistance. Consequently an acute abscess is the result of the entrance of pathogenic germs into the tissue, the resistance of which has almost been reduced to the minimum in its resisting power.

I have isolated from one to nine different kinds of bacteria from a single abscess. In several instances I isolated four forms in which it was impossible to produce in animal a single process that indicated that of the formation of pus. Such a condition could only be accounted for by growing these organisms in the same culture media, and making inoculations from the culture in which the four forms have grown together, in which case the condition proved that these organisms must be together in order that the active inflammatory and pus-producing powers could be accomplished. I hope at some future time I shall be able to go into more detail with this peculiar biological phenomena, for such phenomena have an important bearing on the pathology and treatment of various diseased conditions, especially like those of alveolar abscesses in which we have the introduction of a number of bacteria of different species.

Out of the many varieties of bacteria in the oral cavity it is a question if not all of them, under certain circumstances, are not capable of producing inflammation under some conditions, while

on the other hand if these same bacteria were permitted to live constantly in the saliva of a perfectly normal individual, it is a question if any one of them would produce the formation of pus. But if these bacteria were to remain in the tissue for any great length of time they would become mild, irritating agents and produce certain degenerative changes in the tissue, which would not be recognized by the unaided eye as diseased conditions for, perhaps, months and even years.

The more closely we study the biological activities of bacteria as found in the mouths of healthy individuals and those taking part in local pathological changes in the tissue, the more nearly will it be possible to retain the roots of the teeth in a healthy and useful condition. When an abscess has been established at the apical end of the root of a tooth, the question naturally arises: In what manner and to what extent can that tooth be retained as a healthy and useful member? It has been my privilege to study the bacteriological and pathological conditions of a large number of teeth in which the treatment and root fillings had been done anywhere from several months to a number of years previous to coming under my observation, in the removal of the root canal fillings, in a majority of teeth, which many times consisted of various forms of gutta-percha, the oil of eucalyptus could be detected.

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.,
CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF
DENTAL SURGERY.

SHOP TALKS—No. 14.

TREATING AND FILLING CHILDREN'S TEETH.

The best procedure to be followed in treating and filling children's teeth is often a problem worried over more or less by every operator. To follow any rule is more difficult than with grown-up people and with these we are often foiled in our purpose to do our best because of the different natures and dispositions we have to deal with.

Children are brought to us in different moods, according to what has got into their little heads, or what has been judiciously or injudiciously put into the heads by parents and others. Some come smiling and really eager to have something done to their teeth like grown folks, while others come with enormously magnified fears, which makes it well nigh impossible to do anything. Sometimes we may think they are not so much different from grown-ups, after all; for, really, some people come with about as much judgment, or lack of it, as a child, and exercise about the same control over themselves.

If, as modern dentists, we study to let our mature people down as easy as possible, striving to be painless dentists, how much more should we strive to consider the little ones among whom aches, pains and discomforts are usually largely magnified.

If we could but impress upon our patients, and we should endeavor to perhaps more than we do, the prudence of bringing the little ones to us before any aches begin, how much our operations for them would be simplified, and how much greater the benefit to them, and we could really perform painless dentistry for them in most cases.

Some mothers are on the alert for the first signs of decay in their children's teeth and some few will bring them as soon as little black specks are detected; but others seem to reason that there is no occasion to think of the dentist until the child complains, or they can see a cavity that they could put the end of a pencil into.

When they come with the little specks—the child so small as to be held in their arms, possibly—how easy it is to clean the small cavity with a swift, sharp bur and fill it, and usually without pain, or even discomfort. The deciduous teeth at such a time will tolerate a metal filling in those small cavities, usually amalgam, and the chances are that decay checked then and in that way never recurs, (if the work has been at all well done) during the life of that tooth. It may, of course, decay elsewhere, but like the teeth which come after they have their spots of imperfect construction, and when those have been attended to and proper attention given to cleaning with floss silk between the teeth, which mothers should be instructed in, they will perform their office for the full time allotted them with little or no more filling.

The child who has gone through an experience like that, suffering no serious pain or discomfort, comes back with little hesitation or fear of the dentist's chair when the permanent set begin to show signs of decay. They have been educated to come to the dentist cheerfully.

To insure the best results with these little spots of decay in first teeth, and where possibly a particularly nervous child has precluded thoroughness of removing decay, nitrate of silver may be employed to treat the cavities before inserting the filling. The best way to perform this treatment, perhaps, is to dip the point of a silver wire into the dilute nitric acid (when nitrate of silver is formed) and then touch the cavity. Or, a solution of nitrate of silver may be used and a small bit of cotton or spunk employed to moisten the cavity.

The value of this substance in checking caries is well known, and is not infrequently used in certain places in permanent teeth before the filling is placed. Exposed to the light the spot treated with nitrate of silver becomes very black; and, in anterior and permanent teeth generally where discoloration would be objectionable, its use should be very guarded or avoided entirely.

But some deciduous teeth are prone to decay rapidly and especially the anterior ones, and checking this and keeping the teeth, though black, till their time comes, is more important than the mere matter of appearance; and any operator of experience knows how frequently cases may be brought for treatment where the decay has gone beyond any possible skill of rational filling; or to a point where, if they were permanent teeth, crowning would be called for. These

cases should be liberally treated to nitrate of silver several times at intervals regardless of discoloration. In these extreme cases little effort is made to remove decay other than that which may be easily removed without pain. In many cases no filling is attempted after this, but for the sake of comfort the proximal and others cavities where food would accumulate unpleasantly should be filled with gutta percha or cement. Oxyphosphate of copper is excellent, except for its jet black color. In fact, this substance is in itself inhibitory of the germs of decay, and stands in much favor with many operators.

In several instances, when the child has been under good control, and where moisture could surely be excluded by use of rubber dam or napkins or cotton rolls, Ascher's enamel has been used by the writer and others to fill cavities and restore contours in deciduous teeth, especially anterior ones. This is not a cheap material, to be classed with oxyphosphate of zinc or copper, and the exclusion of moisture is as imperative as in the use of cohesive gold, and for a considerable time, hence the difficulty in its use with some children; but many a fond mother would not hesitate at the expense if the beauty of her child's mouth could be preserved as long as the little teeth remain. It means pretty thorough removal of decay, but after that the enamel, thoroughly adapted to the cavity, is a very safe preservative material.

In the use of this enamel it goes without saying, of course, that nitrate of silver treatment, with its discoloring effect, is contra-indicated.

Where children come with large cavities in molars, but with no pulp exposure as yet, the thorough and often painful (painful if thorough) removal of decay may be avoided if the nitrate of silver treatment is used prior to inserting a filling; and thus our work is durable, while tediousness and pain are largely eliminated, and the child is our friend.

But here comes a child with toothache and an exposed highly inflamed pulp, what is to be done? A congested pulp needs blood letting. Clear the cavity as well as is possible and apply carbolic acid or tri-cresol. If this can be absolutely confined so as not to flow over on to the soft tissues, gentle pressure on a plug of rubber over the medicament may be employed—pressure anaesthesia method—increasing as rapidly as possible without producing pain. This will

work out beautifully in some cases, but with others it may not. Anyway, after this treatment try to lacerate the pulp which may often be done painlessly and bleeding produced. With the bleeding, the tension and pressure subsides and the ache stops after a little. If anaesthesia has been produced the pulp may be extirpated at once. In any event, the pain is stopped or is subsiding, and we may soon apply devitalizing medicaments, if in the judgment of the operator they should be used, and without much fear of the ache returning.

In children's teeth arsenical preparation should be cautiously and sparingly used and the application should remain but a few hours—or say, perhaps over one night. When sensitivity has disappeared the pulp should be removed, and the chamber and roots filled with a paste of tri-cresol and oxide of zinc, surplus liquid being absorbed with cotton. Again, in a deciduous tooth with but a few more years to stand, before displacement by the permanent tooth, we do not have to be as exacting in the removal of all traces of the pulp from roots as we do in permanent teeth, provided we use the paste root filling above, or something similar and as effective as an antiseptic. This is a preservative that will keep conditions aseptic very likely as long as the tooth is in place. Made thin it is easy to work to root extremities, and the excess of liquid may be absorbed with cotton until the paste becomes quite dense and hard. Then the filling best adapted may be inserted over it. Should trouble recur this paste root filling is easily softened and removed.

These teeth come to us frequently with pulp dead and decomposed. The procedure to secure removal of putrescent contents and produce a sterile condition, eventually, is the same as for any tooth so affected. Then, when root is sterile, the same paste filling may be used as above described.

Deciduous teeth with abscess and fistulous openings, should have all debris removed and then some of this root paste worked and pumped into the root extremities, followed by pressure with a rubber plug. After which, more paste, pressed in with cotton pellets, which take surplus liquid. It is then ready to fill with g. p., or whatever may be determined upon as best.

The idea in above methods is to do the best that may be done for the little ones with as little tediousness and discomfort as possible, and when what is done must be done in short order.

(To be Continued.)

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

BY R. B. TULLER.

Me?

I'm the dentist's son.

But I wist I wuz Bud Bimley.

'Cause his pa has got a naughtymobile.

An' my pa says, "Shank's mare 'll do fer us"; but I hain't never seen no mare, ner no other kind of a hoss, yit.

We don't never git to go, 'cept to walk—er sometimes go on th' trolley.

Bud Bimley's pa he's a permoter, an' don't never have to work. Pa says he's a wood bee. He said one day he'd been stung by that "skin," so I 'spose he aughter know. But he's got a naughty mobile.

I think a dentist is th' meanest bizness there is; an' pa says so hisself—sometimes.

Ma says to pa, though, "If you had a little more git up and git in you the bizness would be all right."

Then pa says: "You don't know ennything about it. You think if bizness ain't comin' on the jump all the time I oughter go on the jump after it—git out and drag 'em in; an' that ain't no kind of perfessional way of doin' things. You'd like to have me run my office like a cheap department store, an' send out flarehead posters, an' have bargain days, an' things like that; an' git fired out of my society."

Then ma, she comes back—she most allus generally comes back—an' she says: "I don't care whether it's a trade or a perfession, I'd like to see you have nuff money to meet yer rent when it comes due, an' keep yer credit good onct in a while with the butcher an' the grocery man."

(Ma hain't a-skeered of pa, no time.)

Pa he says, "Well, yer livin', ain't ye? An' you ain't been turned outen doors yit. An' you know mighty well if I had what wuz comin' to me I could take care of everything. You can't bild up a practice in one year, ner two, ner three years."

"Ner five!" ma says. "If you had what wuz a-comin' to you—oh, well, th' trouble with you is you let folks hand you the lemon too offen."

I 'spose she meant somefin', but I hain't never seen anyone hand dad no lemon—ner no orange either.

I've seen 'em hand him a five dollar bill when he wuz a-lookin' fer fifty; an' when pa 'ud ask if they couldn't do better than that they'd say: "Why, man alive, don't you know it's comin' on Christmas time, an' I've got to blow 'bout a hundred fer Christmas things? Yer lucky to get that much."

Well, pa'd hang on perty hard fer more, but it didn't do much good, an' when they'd go I've heard pa say things—if ma wasn't too close—well, I know one thing, if I'd say 'em I'd get somefin' comin' to me alright.

But I hain't goin' to give pa away to ma, because, when I stubbed my toe one day I *did* say 'em myself, an' hopped 'round on one foot 'tween times; but no one heard me, 'cept me.

What I know jist now is that we hain't got no naughtymobile, an' Bimleys has. I wist my pa was a permoter—er permotin' somefin' 'sides teeth and gum biles.

Bud Bimley he ast me, one day, how much my pa wuz worth; an' I told him I didn't know, but I'd seen him have two ten doller bills to onct. Then Bud he said, "*My* pa is worth 'bout 'steen millions; 'sides the morgage on our house," an' I hatter own up that I didn't think my pa had over ten millions, 'sides the *insurance* on our house. Gee! but I felt mean about it.

Well, ennyway, I guess my pa is the best dentist there is. I've heard him tell his pashunts that he didn't take no back seat fer nobody when it come to fixin' teeth. "I was allus a nateral born dentist," he says, "an' what I can't fix up they can't nobody fix."

An' he says, when he went to college he done more teachin' than the perfessers, an' he hatter coach a lot of other fellows to git through or they never'd a got; an' on account of that, he says, he come perty near not gitting through hisself. Says he hatter go back agin' to git his doploma, and that's what a feller gits fer helpin' other fellers too much—specially on football, he says.

Say, I don't 'spose you know our minister? Ma b'longs to the 11th Presperterian; an' pa an' me *has* to; tho' pa ain't a reg'lar

b'longer like ma. He says if he can't be a b'longer to the *First* he don't want to b'long to enny. I druther b'long to Bud Bimley's 'piscopali'n church if I could.

Ma says to pa one day: "Say, pa, if you'd go to church more reg'lar you might git more bizness. I know the minister has got to have some new teeth some time. He is gittin' wus and wus about his speakin', an' I heard him say he guessed he'd have to have some new ones 'fore long. Now, you put on your best close and go with me to th' church supper tonight an' I'll manage to bring the subject up to him with you on the spot."

Well, pa went, an' ma she kep' her word; an' pa made a 'pointment. Then ma says, "Now, Joel, you have got the chanct of yer life to show the hull church what you can do, an' you want 'o show 'em." "You bet," says pa, "I'll make him better teeth than he *ever* had. Leave it to me!"

Well, sir, although pa's specialty is fillin' teeth, an' makin' crowns an' bridges, an' inlays an', an' gold plates, an' porcelain work an' things, he made them teeth for the minister, an' when he got 'em done I wuz 'round to see how he looked 'fore and after.

He looked like a old woman afore, an' when he got them teeth in he looked 40 years younger, as pa said, an' a hot sport; an' pa was awfully pleased with his job.

Then the minister he got up an' he walked over to the glass an' he skinned up his lip, an' made faces an' twist his face this way an' that, an' then he looked right straight at hisself an' he said—it makes me kind of skiary to say it, but he—he said: "Je-sus Christ-t, the only be-got-ten son of God-d," an' every word was so deliberate an' plain.

Well, you oughter seen pa turn pale; an' I wuz jus goin' to duck when pa finally got his breath an' said kind of trembly, "What is it, Dr. Chinney? I thought they looked fine—jest as natural as life; but if you don't like 'em, I'll——"

"Like 'em? Why, man," broke in the minister, "they are fine. I was jest tryin' 'em. Do you know, sir, that that's the first time in years that I've been able to speak the name of our Savior and some other things with such distinct and clear enunciation?" An' then he practiced some more; an' pa nearly threw a fit—fer two reasons, namely: one 'cause the teeth fit, an' the other 'cause somefin' hit his funny bone.

Well, when the minister got thru practicin' he turned to pa and says: "They're all right. What's the bill?" an' pa says, fifteen dollars; an' the minister says: "Of course, you make the usual reduction to the clergy. That, I believe, is half rate."

Pa he spit onct or twict, an' his funny bone quit, an' then he fumbled some instruments an' his face got long, an' he said: "Well, Doctor Chinney, them teeth cost me 'bout ten dollers. I think I ought to git the cost."

The minister said he didn't think he had quite ten with him, an' he squeezed out, after tryin', eight dollers an' 30 cents, an' pa says: "Oh, keep the 30 cents, if you feel like it, an' send it to the heathens. I don't want it."

Dr. Chinney put it back in his pants and thanked pa, an' said he hoped to see him at the church offen.

After he wuz gone pa fergot 'bout me, I guess; but ennyway he got before the glass an' he made faces at hisself, an' then he broke out an'——

Well, I jest thought it best to close the door to our livin' rooms, an' then pa says: "Oh, sonny—why—yes—I wuz just seein' if I could 'nunciate—you know—like the minister. Now run along; papa wants to be alone for a little while. Yes, close the door after you. Be a good boy—an' don't tell all you know."

You bet I know'd what he meant, an' I hain't told nobody but you; an' this is strictly confidenshul. Don't you tell ma 'bout pa tryin' to ack like th' minister, I'm goin' to depend on you, now.

There's Bud Bimley; I gotter go an' see him. Sometimes I wist I wuz him, but not *all* the time; I kind of like pa, tho' I wist he wuz a permoter or somethin', an' we had a naughty mobile.

ASCHER'S ARTIFICIAL ENAMEL.

BY C. M. BALDWIN, D. D. S., CHICAGO.

The December, 1906, issue of *The Dental Digest* contains a paper on "Silicate Cements Versus Porcelain Fillings," by L. M. Markham, M. B., B. S., L. D. S., England. He considers the new plastics as a group, and states that they shrink and cannot be classed as permanent filling materials.

In the January, 1907, number of this journal Dr. Tuller writes of some cases for whom Ascher's Enamel was used. These are the only articles relating to the subject that the writer has noticed, and but one of these mentions Ascher's Enamel.

Thousands of dentists are using Ascher's Enamel and the different reports indicate that the personal equation is the determining factor that has brought failure to some and success to others. During this testing period the results obtained will be a judgment upon the operator as well as upon the material. This is an opportunity to use his ingenuity, judgment and skill, and demonstrate his ability to adapt himself to new conditions.

The comparison of different methods that have been successful will help to establish a more or less definite technique, that will greatly increase the proportion of successful work.

There can be no doubt but that Ascher's enamel or some improved plastic is to take an important place among our filling materials, if it does not indicate the class from which the long desired ideal filling material is to come.

The request for a paper upon this subject has been complied with, hoping that those beginning the work, and those who have not secured good results may find something helpful.

While but one year's observation of a new material is the basis for this paper, the extreme tests to which the enamel was subjected would expose its weakness in the shortest time, in order to exclude any class of cavities in which it proved unsatisfactory as a permanent filling material.

COMPARATIVE VALUES OF FILLINGS.

When comparing the relative values of filling materials for any particular cavity, it is not hardness, density and edge strength of the

filling that will benefit the patient most, but rather it is the combined strength of weakened tooth structure and filling as applied that best resist mastication and chemical action, and leave the tooth, gums, peridental membrane, and vital forces of the patient least injured by the operation.

Failures in well established methods of practice reflect upon the operator, but unsuccessful results with Ascher's enamel are too often attributed to the material instead of looking elsewhere for the cause and trying to eliminate it.

ASCHER'S ARTIFICIAL ENAMEL.

The circular states that Dr. Ascher and Herr Stenbock have developed this product after ten year's research and experiment, and that it has been used in Europe more than four years with great success. The enamel contains about 54 per cent of silicate and large quantities of beryllium, which is extracted from semi-precious stones from Ceylon and Brazil. The colors are made from ground porcelain and will not change. If directions are fully followed the filling will be far superior in appearance to porcelain inlay or gold, as serviceable as the latter, absolutely insoluble and will not shrink in the mouth.

This displays the greatest confidence in the material and sets forth claims which, if fulfilled, places Ascher's enamel high above all other filling materials. The circular also gives careful instruction on manipulating the material.

SOME CAUSES OF FAILURES.

It is really surprising to know the conditions under which some dentists have used Ascher's Enamel. Failures will be caused by attempting the work without suitable instruments. "Just trying to see if it is any good." One might just as well judge of the results of trying to build a difficult gold filling, using instruments designed to mold plastics.

Other causes of failures may be due to faulty manipulation, improper mix, lack of confidence in the material, causing insufficient attention to details generally. The saliva will weaken it if in contact too soon; and vaseline also may do harm if worked into a soft surface. Fillings left too high may be fractured by antagonizing teeth upon removal of the rubber. It is hardly to be expected that

anyone will be able to avoid all mistakes when beginning to use Ascher's enamel, but many may be eliminated with a little experience.

TESTS MADE OUT OF THE MOUTH.

A few tests made out of the mouth were sufficient to demonstrate that Ascher's Enamel shrinks under some conditions but such conditions cannot exist in the mouth. Fillings placed in old dry teeth and those in cavities cut in dry bone showed shrinkage in a few hours, such as I have never seen in the mouth. Other tests showed that the shrinkage could be controlled or prevented. Vaseline applied to the tooth and the filling prevented shrinkage, but if it was removed shrinkage occurred. While differing considerably from hydraulic cements in that the action of water during setting weakens it, still the hydraulic character is evident, because it shrinks when absolutely deprived of moisture and shows none when this characteristic is satisfied.

NEW PROCESSES.

It is well we are not satisfied with things as they are or there would be but little progress, but it is not strange that dentists, especially the older ones, are skeptical when a new method is advocated, unless it be capable of demonstrating its superiority at once. "If we go back through the pages of dental literature we find a condition of unrest and dissatisfaction occasioned by a diligent search for a satisfactory filling material. While the advances made in this particular have been considerable, and while the advent of porcelain appears to have brought us very much nearer the coveted goal, may it not be said that there exists today—all things considered—almost as much dissatisfaction in this regard as ever before?" . . . "I know it will be argued that our interest in filling materials lies only in the general satisfaction which they give, and that the efforts to improve these should rest with the manufacturer. With this idea I cannot entirely agree. While it must be admitted that a large proportion of the credit for the improved filling materials of today belongs to the manufacturer, very much has been done by the profession itself, and further agitation regarding what is desired in this direction would be most welcome and appropriate."—(*Cosmos*, August, 1906, Broomell.)

MAKING A SET OF INSTRUMENTS.

Anyone wishing to give Ascher's Enamel a fair trial should have a set of instruments designed to meet the special requirements of the

material, as the ordinary steel instruments are unsatisfactory. When the writer began this work the Ascher set of instruments had agate ends, and he made a set with bone ends which seemed better adapted to the work, being smaller, less brittle and having a greater variety of shapes and sizes. The present set furnished by Ascher have tortoise shell ends, with quite a variety of shapes, and are improvements upon the first set. A large spatula should be purchased, but several small ones should be made from flat bone or ivory crochet needles. Tortoise shell, ivory, fine grain bone or horn may be used when making the ends. Crochet needles and combs are so nearly the shapes that but little work is necessary to make the ends.

To insure strength at the neck of the instrument allow sufficient bulk so that a hole drilled about one quarter of an inch deep will not leave it too weak for the work required of it. Large ball burnishers should be made from round crochet needles, but the other shapes should be made from some part of small combs. Small round burnishers may be made from backs of combs or from crochet needles, and all flat burnishers are made from the teeth, which are almost ready for use before altering them.

Shape the ends with files before cutting them from needle or comb; they serve well as holders. To secure bulk when making flat ends, remove one tooth from each side of the one to be used, and saw through the back at the places where the teeth were cut away. When the ends are shaped approximately, cut them off, drill holes and set with gum shellac on steel handles. Finish shaping and polishing with files, emery paper, stones and disks. One set will be needed to insert and shape filling, and another set is necessary to use with vaseline. In addition to these sets a very slender pair of sickle-shaped flat burnishers (S. S. White's No. 1 and 2) have been very useful at gingival margins of bicuspid and molars, when the space is too small to use the other instruments.

SHADE GUIDE.

The shade scale issued by the company should not be relied on in selecting shades, particularly when filling cavities that involve the labial surfaces. It is necessary to know the shade of each bottle of powder, as there may be errors in bottling, and a possible variation in the powder itself. A shade ring can be made by cutting cardboard into pieces two inches long, and a half inch wide. With a plate

punch make a hole near the end of each, and pass a wire through, joining the ends of the wire. Number cards to correspond with the bottles, stick a sample on the free end of each card, and when hardened coat with vaseline. As many combinations of shades may be made as desired by using two or more powders in equal or different proportions, and correctly marking card. Such a shade ring shows the actual shades in one's possession, arranged conveniently for comparison with the teeth.

CAVITY PREPARATION.

Cavities should be given a general retentive shape, such as would be required for any permanent filling and generally the margins should be at right angles with the surface of the tooth. The margins may be beveled as in porcelain inlay work, but only in the same places and when indicated.

The porcelain-like nature of Ascher's Enamel demands bulk for strength, and this means that margins must not be beveled as for gold fillings. Because the enamel is packed in as a filling, it is unnecessary to extend margins as required in inlay work, and being very adhesive it supports weakened walls rather than strains them by its insertion, hence there is a saving of tooth structure in cavity preparation.

BEFORE FILLING.

The shade should be selected before the rubber is adjusted, as the natural tooth shade many times has entirely disappeared, and always so altered during cavity preparation with the rubber on as to mislead one. Carefully notice the occlusion when opposing teeth can touch the filling if left too prominent, and if cusps or location prevent accurately seeing, try Dr. J. E. Nyman's suggestion, viz., place a small piece of gutta percha or modeling compound in the moist cavity and have patient bite into it; chill and remove from cavity, keeping it for guidance when packing and finishing filling. Use the rubber when possible, because even small fillings must be protected from moisture for fifteen minutes or longer according to the mix.

MIXING THE ENAMEL.

It requires personal experience to know what will be the best mix for a given case, and the difficulty of making such a mix increases when more than one powder is used to secure the desired

shade. The best mix brings out the correct shade, develops the maximum strength, sets and may be finished within a reasonable time proportionate to the work. Mixed too thin, it lacks strength and color, sets slowly and delays the finishing. The other extreme gives a mix that sets too quickly, lacks adhesion and translucency and should not be used except for small, easily reached cavities where the opaqueness will not be objectionable.

The stiffest mix should show some moisture, and the softest mix should set so that the finishing may be begun within fifteen or twenty minues. When the filling does not harden so that a burnisher will slip over the surface without adhering thirty minutes after insertion, cut it out and fill with a much stiffer mix. Usually large, compound fillings should be ready for the vaseline and compression with vaseline coated instruments as soon as the pits and fissures have been closed, but vaseline should not be applied too soon, especially when the cavity is small and easily reached, as the small mix is apt to be softer than was expected when spatulating.

INSERTION OF FILLING.

Everything to be used in filling the cavity should be conveniently arranged so that nothing shall interfere with its insertion immediately after the material is mixed. Divide the mass into two or more sections, even though a small cavity is to be filled; with a suitable instrument place the first piece in the cavity, making it adhere to the floor, wall or margin. Many times it sticks to the instrument more than the tooth, and it is necessary to dislodge it by drawing the instrument against a wall or across a margin. The stickiness of instruments may be sufficiently removed to continue packing by quickly twisting the end around on a clean piece of cloth. With properly shaped instruments pack the deepest portions, margins included, then add piece by piece until there is a slight excess after condensing. When each piece is added give first attention to packing against the margins, while the material is most adhesive.

Pack each layer so as to further condense the preceding one, to eliminate air spaces and secure maximum strength. Avoid building a great excess, which takes time and hard grinding to remove, but a few such experiences will be valuable, as demonstrating its resistance to friction. Careful surface condensation will prevent displacing deeper portions in compound cavities and should produce a

more compact mass, therefore no effort to reduce the excess by forcing it across the margin should be made after hardening has begun. When condensing with the vaseline set of instruments, force should always be directed toward margins, and never should be so great or of such a character as to detach the partially set material at any margin.

MATRIX.

A gelatine matrix is used when filling most compound cavities. The large medicine capsule cut into strips makes an ideal matrix for this work, when properly reinforced with cotton tightly packed against the gingival margin. This is sufficient when filling ordinary compound cavities, but when a large portion of the lingual or buccal wall is also missing, additional reinforcement greatly aids in placing, packing and finishing the filling, and reduces the time all through the process. A stronger filling will be the result, because the rigid wall prevents the entire mass from moving while being packed, and is especially needed when large incisal corners are to be restored. A softened piece of modeling compound or gutta percha large enough to rest against one or more teeth on each side of the cavity tooth is molded against the lingual or buccal surface of the teeth. While soft the cavity surface of the material is shaped as desired to restore the wall; chill, remove from mouth and trim at margins to permit a little excess of filling, or at least enough to clear the margins of any overlap. Either have one gelatine strip large enough to cover all walls to be restored, or after the first matrix is placed, slip another piece between the tooth and the last reinforcement. The gelatine matrix is digested soon after removing the rubber when adhesion prevents easily displacing it.

FINISHING FILLINGS.

A well condensed surface without excess, polished only by the smooth surface of the matrix and burnishing of instruments, will produce the ideal finish. All excess should be removed with corundum, rubber corundum and Arkansas stones, sand paper and cuttlefish disks and strips, plentifully lubricated with thin vaseline, but it should never be ground or burnished into a soft surface. All grinding should be done with a light touch, rather than with considerable pressure. Finishing files do not seem to darken the filling and have been used to advantage.

Complete the finishing process before removing the rubber, including sufficient reduction of the occlusal surface, but when additional grinding is necessary carefully dry the filling, cover surface with vaseline, and use vaseline on stones or disks. When possible for the opposing teeth to touch filling, caution patient to close teeth without pressure and carefully notice whether or not the teeth are brought accurately together and if the filling is sufficiently reduced. Be certain that the teeth cannot touch the filling before the patient leaves the chair. At such a time the filling has become brittle, and if too high may be fractured by the opposing teeth. When all excess and scratches have been removed, thoroughly burnish the surface with the vaseline set of instruments.

TWO MIXES.

Sometimes two mixes will be found an advantage when filling large compound cavities. The first mix should be sufficient to fill about two-thirds of the cavity, including the margins most difficult to reach. This portion should be condensed thoroughly and the margins well packed before making the second mix, as it will be partially set when the balance of filling is added, and altering would weaken it. The surface against which the second mix is to be packed should be left more or less roughened, especially if this part of the cavity is non-retentive, and small particles adhering to the margins should be removed.

Always have a second spatula ready for an extra mix whether a second mix is contemplated or not, then it can be added while the portion in the cavity is adhesive, instead of requiring a definite cavity form of retention, when a little more material is needed.

With the second mix it becomes a comparatively simple matter to complete the filling without haste, because the bulk of the filling has some resistance and the fresh mix is thoroughly plastic and adhesive, and the remaining margins are sealed, instead of merely covered with a more or less hardened mass. To fill very extensive cavities involving margins difficult to reach, or that will require considerable time to pack thoroughly, is very liable to result either in using too soft a mix so as to delay the setting, or if a good mix is used, setting will render the material unfit for properly sealing the margins last covered, hence the need of a second mix.

DURABILITY.

Wishing to know as soon as possible how Ascher's Enamel compared with our best filling materials, favorable cases for the most extreme tests were selected, requiring large restorations where nothing but inlays, amalgam fillings or crowns would otherwise have been used. Such tests, together with labial gingival fillings to watch the chemical action, would include all classes of fillings less exposed to the force of mastication and dissolution by the oral fluids. Favorable results where we might least expect them gave increased confidence, and soon other classes of cavities were filled with this wonderful plastic. Crowning has been indefinitely postponed in several instances where the occlusal, mesial and buccal walls of a pulpless bicuspid were almost entirely restored, and another bicuspid having almost a duplicate cavity was filled, except that a distal wall was involved instead of the mesial.

SOME CASES.

An unusual case having five open face gold crowns on the upper incisors and a cuspid, showing large quantities of gold, was an excellent opportunity to demonstrate the contrast between an extreme gold exhibit and an esthetic restoration of the teeth with a tooth-like filling. The gums were much congested, having been irritated by the crowns which were not adapted to the case. Both gums and the glaring gold were displayed when the young lady smiled, making a very disagreeable appearance. All the crowns were removed and the gums treated at the first sitting. Ten cavities, including most of the corners, were filled with Ascher's Enamel and several roots were treated and filled. The removal of so much visible gold, relieving the inflamed gums and restoring the natural contours of the teeth with the enamel, wrought a transformation that was highly gratifying.

The left lateral incisor seemed doomed to crown work, but large mesial and distal compound cavities were prepared without involving the pulp, and a chalky spot on the labial surface was cut out, joining the two cavities, serving very nicely as a substitute step instead of cutting one across the edge, and all was filled with the enamel.

MALFORMED TEETH.

The defective labial surfaces of the upper incisors having pits penetrating the enamel, are beautifully changed when filled with

Ascher's enamel. Gold fillings in such cases make the teeth appear as though riveted, and are decidedly noticeable, while cement must be frequently replaced, and is opaque and lifeless. Porcelain inlays might be used, but the difficulty of securing satisfactory results in these small conspicuous cavities, together with the necessary fees, almost exclude inlay work for the majority of children, but regardless of fees these cavities especially seem more satisfactorily filled with the enamel than with any other material.

A young lady had four such cavities in an upper central; two were the usual labial cavities, one had involved the distal corner and one was on the mesial. For more than ten years they had been repeatedly filled with cements, with comparatively slight loss from decay. All were filled with enamel at one sitting, including a fissure cavity in a lower bicuspid. It would require a critical eye to detect these fillings, and this very defective tooth appears as though it had never been malformed or attacked by decay. A young girl had five cavities in the upper centrals, and a boy of fourteen had nine cavities in the incisors and cuspids. Except when separation requires another sitting, in each case all such cavities have been filled at one sitting. Grouping small cavities saves considerable time in this work.

REPAIRS.

Considering the severe tests to which the writer has put the enamel, it is a pleasant surprise to note how few failures have occurred, and what caused them. So far as known but one filling has needed replacing, and a few margins repaired, and these were caused by a lack of experience resulting in faulty manipulation, occurring almost entirely in the first few months of the work. The filling was in the distal surface of an upper central and included more or less of the lingual and labial surfaces, also the corner, but not so extensive as many others that have been filled with the enamel. The lower incisors touch this tooth at the edge, then slipped up the lingual surface almost to the gums. Undoubtedly the filling was left a little prominent on the lingual surface and was more or less weakened before thoroughly hard, as almost the entire filling was gone when she returned a few weeks later. The original cavity was refilled and the filling has now had more than six month's use without showing any change.

The only margins known to have chipped have been subjected to the force of mastication, and most of these cases were distinctly remembered that where the margins shipped the enamel had become too hard to apply properly. All such repairs are easily made, and have been needed only in some very extensive compound cavities. In no case has a large portion of the filling been broken away, simply from the force of mastication. A few repairs have been made where it was found that the filling had been left a little too prominent.

REPAIRS OF OTHER WORK.

Defective margins of large gold fillings have been repaired, sometimes entirely hiding the gold where it showed before and would have been more conspicuous if repaired or refilled with gold. A molar crown in the mouth of a woman had been made with a saddle back porcelain tooth soldered to a gold cope. She came in one day with the porcelain broken from the gold. The pins had broken close to the porcelain, which had been ground flat and sloping from buccal to lingual. The cope floor was smooth except for a slight flange at the lingual and distal, and inclined to correspond with the porcelain. Having been strongly impressed with the adhesiveness of Ascher's enamel, we decided to give it a trial, although it seemed almost hopeless. The tooth was set May 17, 1906, without other precautions than to maintain dryness, and it is still doing good service.

One month later a duplicate repair was made for a crown antagonizing the one repaired. This one was reset seven months later, and again detached in about one month, when a new porcelain crown was made. When first reset, the entire layer of enamel was found firmly attached to the gold, and showed no evidence of chemical action. Before resetting, grooves were cut in the porcelain, and the enamel was applied to it instead of to the gold, as before. When again detached, the layer of enamel was broken, having about two-thirds of the layer adhering to the porcelain and the balance on the gold. This cope inclined 45° and gave too little support, leaving a heavy strain on the attachment. The first bicuspid and second molar had been extracted for many years, which brought all the forces of mastication on one bicuspid and the repaired crown.

PORCELAIN BRIDGE REPAIRED.

Some porcelain enthusiast had made a bridge extending from the cuspid to the upper first molar, placing the metal bar on the

gums because of the short bite. Most of the porcelain on the lingual side of the bar was broken away, including all of the porcelain on the cuspid except the facing. The fracture extended labially between the cuspid and bicuspid, carrying away the mesial surface of the latter, including a part of the facing. With small wheel stones the fractured porcelain between cuspid and bicuspid was ground away, forming a flat seated cavity, deep enough to allow a thick layer of enamel to be packed. No attempt was made to replace the porcelain lingual to the bar, but all of the balance was replaced with Ascher's enamel. Great care is required in those cases where the rubber cannot be used, as the enamel must be protected from the secretions fifteen minutes or longer.

In this case, after using a cotton roll, the saliva ejector, astringent and air syringe, a thin coating of vaseline was spread over the gums near those parts where the enamel was to be packed. This patient expected to have a new bridge made, and doubtless it would have been necessary had I not used the enamel.

GOLD CROWNS REPAIRED.

Where holes have appeared in the occlusal surface of gold crowns, and the cavity could be cleaned and kept dry, the enamel has been used to make the repair. In one case a very thin defective gold crown was removed from a lower second molar having a live pulp. The tooth had been ground but little and only on the occlusal surface, which was saucer shaped, due probably to the short bite. The young lady said this crown had been made and reset three or more times in a few years. There was a large mesio occlusal cavity which was cut to include a large occlusal surface and then filled with Ascher's enamel.

FITTING BANDLESS CROWNS.

Bandless crowns can be made to accurately fit roots, and an old crown may be reset even though decay has changed the end of the root. The gums should be forced away, fully exposing the end of the root. Apply the enamel to the crown, shaping as accurately as possible, to prevent a great excess, before placing on root. Condense the material, sealing the joint with crown, and cover enamel, root and gums with vaseline. The enamel should not be too soft, but must be easily compressed when the crown is forced to its place on the root. Remove immediately or as soon as hard enough to maintain the im-

pression of the root. Allow to harden, trim excess and polish, using vaseline. Remove vaseline from root and root surface of crown, take precautions against moisture and set with material to suit the case.

CONCLUSIONS.

All patients for whom Ascher's Enamel has been used have been informed more or less about it, and they were urged to report any need of repair or replacement. It has been the understanding that I was to consider everything to be in good condition until notified to the contrary. To further assure myself that this would be done, I offered to replace, repair or credit the fee on any other work substituted for the enamel within one year, limiting this offer to the first fifty fillings inserted. This understanding, together with the condition of the fillings seen, and the fact that the material from the first has been placed in cavities exposing it to the severest possible tests, cause me to have considerable confidence in it as a permanent filling material, even though it has been under observation but one year.

It should be understood that the writer's experience has been confined to the improved article that has been in the market about one year, and that the earlier product was less capable of withstanding the force of mastication. So successfully has the enamel fulfilled the demands made upon it that the writer has not felt it necessary to exclude any class of cavities from its field of usefulness, provided it can be properly inserted, finished and protected from the oral fluids. All work with the enamel has not been equally successful, but the writer has tried to find the cause of the variable results, and thus far is satisfied to credit his manipulation as the cause of the variation instead of condemning the material.

Large occlusal surfaces have shown no loss by wearing away.

Comparatively few margins in very extensive compound cavities have chipped and been repaired.

Not a repair has been required in small cavities or in typical compound cavities in bicuspid or molars. No loss by chemical action has been seen.

Any new method of saving teeth should be judged by the most successful results obtained, rather than by the failures, as the best results demonstrate the possibilities of the method that may be duplicated by others equally skillful, while failures may be due to

many causes not necessarily connected with the method or prove it to be faulty.

RESTORING BROKEN CROWN FACINGS.

Grind or clip the pins of the late facing flush with backing. With a lubricated drill make holes through the backing to suit the pins of new facing. This preparation guides the facing true to place, which will be of service during the grinding to fit backing. Use thin carbon paper for fine adjustment of facing. Bend ends of pins to form loops and invest to unite them with gold or silver solder. While investment dries and heats, finish the preparation of the backing. A U-shaped slot is cut with small dental fissure-burr, starting in the pin holes already made and thus making a tongue around which the loop of facing will fit. A pear-shaped or round burr, not too sharp, will cut away enough of the tongue from palatal side to allow the loop to go to place. Lubricate the burr with vaseline or glycerine.

Having soldered the pins of facing it will be cool enough now to try in place for fine adjustment. Cement facing to place, holding a piece of unvulcanized rubber against the palatal aperture to prevent the cement forcing through. A small ball of soft amalgam at hand quickly closes the aperture in backing and keeps the loop immovable.—*W. G. L. Spaulding, Dominion Dental Journal.*



EDITORIAL

THE ARIZONA BOARD.

The Territorial Board of Dental Examiners of Phoenix, Ariz., seem to have been conducting the affairs of that board in a way to have aroused a sentiment against them on the part of several practicing dentists in Phoenix and elsewhere, who are inclined to stand for fair play, though not personally interested, since they themselves hold the necessary license to practice.

Things came somewhat to a head in November when a Dr. W. G. Lentz failed to pass the board, and claiming unfairness, assaulted the president in his office, punishing him with considerable severity, according to Phoenix papers.

Several local dentists took sides with Dr. Lentz, believing he had not been fairly dealt with; and, led by Dr. Harry H. Wilson (formerly of Chicago) who remembered his own troubles a few years before, formal charges were drawn up against the members of the board and were presented to the governor. The latter took them under advisement, but concluded after investigation that while the charges were not all fully sustained, the board was at fault in many respects, and should therefore be censured.

Those who know the ability of Dr. Wilson, and his years of experience in practice and college work, were certainly surprised that he should be given so much trouble as he had in finally landing a license in Phoenix. In that case the president of the board denied a license against a vote of a majority of the board, and it took the governor's order before he would yield.

We are not in position to judge of the right or wrong in this particular case; but it is plain to anyone that if a dental board in most any state is composed of men who are predisposed not only to keep out the unworthy and inefficient who would be a menace to the public good, but men of known ability and good credentials, they can easily do it. If so disposed a catchy examination can be given that would throw down some of the best men in the profession.

We believe, however, that boards are so carefully selected in most states and especially where the profession, through proper representative societies, have a voice in recommending, that fairness stands out as the most prominent feature. It should be so.

R. B. T.

ABSTRACTS AND SELECTIONS

"A FAMOUS DENTIST IN AJMER."

Under this title, says the *British Medical Journal*, Mooneer Khan, dentist, Madar Gate, near Jubilee Tower, Ajmer, has circulated the following remarkable advertisement: "I make the most reliable English teeth, very fancy and strong that can ever be had in the market. The teeth made by me can be safely used by every religion. They are affixed by an easy way with a fine spring. I possess many certificates in behalf of the art. Terms very moderate, from Rs. 1 to Rs. 10 each. Old teeth repaired at moderate cost. A trial solicited."

Undenominational, or Cowper Temple teeth, present a novel conception, reminding one of the clerical tailor who assured the curate as regards the length of the coat which he was fitting on, "This, sir, is a coat in which you may hold any doctrine." Mooneer Khan's teeth are warranted to masticate without prejudice any food their fortunate possessor may conscientiously chew or eschew. The advertisement has translations in Urdu and Nagri adapted to the comprehension of the native trader.

Dr. M. J. Longinotto (London, W.) writes in the *British Medical Journal* of October 6 with reference to above: Will you allow one who has been much abroad to say a few words? The dentist advertised: "The teeth made by me can be safely used by every religion." From this you infer that the teeth are "warranted to masticate without prejudice any food, etc." Let me point out that the inference is wrong. According to the religion of the Prophet of Arabia (Mahomet) no true and faithful follower of his dare touch anything made of the bone, flesh or fur of a pig, and that is why English-made tooth-brushes, warranted "best bristles," find no market in Mohammedan countries. Now, when we know 60 millions represent the Mohammedan population of India, we can easily understand that the Indian dentist was a man of business when he wanted to make it clear that the teeth he had for sale were not made of pig's bones. The same thing applies to the followers of Brahma, chronologically the first prophet in the world, whose followers dare not touch bones, flesh or

fur of the cow, bullock or heifer; therefore the dentist wanted to assure the 210 millions of Hindus in India that the teeth were not made of bone of kine. Of course, in the west, we know teeth are made of porcelain, etc., but in the east, ivory, metals, rhinoceros tusk, bone, etc., are used in making artificial teeth, and as some animals are held sacred and others unholy, the dentist was anxious to turn human prejudice to his advantage. Dentistry was known in India quite a thousand years before the Christian era; for instance, in 327 B. C., Alexander the Great recognized the dead body of his enemy, Maharaja Prithviraj, on the battle field of Hastinapur, by means of three false teeth made of solid gold. We know that the population of the British empire is 400 millions, of which India alone represents 300 millions, and unless we understand the prejudices of the three-quarters of the British empire our trade is not likely to spread in the east. The Germans have a bureau to study this matter, and that is why their eastern trade is going up by leaps and bounds. It was caste prejudices that caused the great Indian mutiny in 1857. The Bengal army, with magnificent traditions to its credit, suddenly, on May 10, attacked and killed all white men at Meerut, because they thought that the cartridges which were supplied to them, and which they had to open with their teeth, were greased with pig's and cow's fat. This will emphasize the importance of paying attention to Oriental prejudices.

VACCINATION AND THE TEETH.

In the early days of Dr. Jenner's discovery, as Sir John Simon has informed us, the wildest stories were current as to the effects of communicating the "cow-pox" to man. The Book of Leviticus was quoted, with dark insinuations against 'contaminating the form of the Creator with the brute creation.' A child at Peckham, it was gravely asserted in a surgeon's treatise, had its natural disposition so changed that it ran upon all fours, bellowing like a cow and butting with its head like a bull. A lady's daughter coughed like cattle, and had grown hairy all over her body. Sarah Burley's face was distorted and began to resemble that of an ox. Master Joules, in like fashion, became the ox-faced boy, a proverb and a frontispiece. If similar metamorphoses are not alleged now, the almost superstitious horror of vaccination among the ignorant classes has not vanished of late years.

A paper read on June 30 by Mr. Herbert Steynor, L. D. S. Eng., of Great Malvern, before the Central Counties Branch of the British Dental Association, at Birmingham, on "The Constitutional Factor in Degeneration of the Teeth," is hardly calculated, we think, to diminish this. Unconvincing as we find it, it should prove of interest to a correspondent, a letter from whom appeared in our columns some time ago (vol. i., 640). He had read in a daily paper that a Bangor dentist had been granted a vaccination exemption certificate on the ground that "vaccination is bad for the teeth" and invited our opinion on the point raised.

Mr. Steynor attempts to prove that had Jenner not published his great discovery, the teeth of the present generation, if not quite so good perhaps as they were in byegone ages, would at least be considerably better than they are.

He has arrived at the conclusion that the cause of dental caries, which is generally admitted to be now more prevalent, is to be found in the impairment of the vital resistance of the individual (if this be really the explanation it is difficult to understand how it is that the expectation of life has risen rather than fallen) and that one cause of constitutional weakness is vaccination.

In the course of his argument, through all of which limitation of space will not allow us to follow, he omits all reference to the unvaccinated.

Now, in London alone, between 25,000 and 30,000 children who escape vaccination are annually added to the population, and the corresponding number for the whole of England is not far short of 100,000.

Can he show that the teeth of these are better, or that caries is any less prevalent in their mouths, or that they are less susceptible to other diseases?

In the course of his paper (vide *British Dental Journal*, August 15), he sums up some remarks of Dr. Allen, late professor of physiology in Mason University. We do not know whose fault it may be, but one of the statements attributed to this gentleman strikes us as somewhat difficult to follow. "The improvement," he is made to say, "in obstetric art . . . enabled many to reach the marriage age who would otherwise have perished in the struggle for existence." We should have thought that such improvements as may have been

made in this direction would be in favor of abnormally large children rather than puny, ill developed specimens.

Continuing, he lays stress upon some remarks made in 1902 by the late Herbert Spencer (who was not, it should be remembered, a medical man). These he brings forward in order to establish the fact that a relative greater debility and lowering of the vital resistance ensues as the result of vaccination. Thereon stress is laid upon the fact that measles was at the time the article was written, at any rate a more severe disease than it used to be and that the same could be said of influenza. Mr. Steynor leaves out of account altogether the fact that for the last two or three years scarlet fever has been a comparatively mild disease and that the decrease in its mortality has been going on for the last thirty years. He also ignores another fact, viz., that smallpox itself, which in the past has been rightly regarded as one of the most virulent and fatal of infectious diseases, has recently assumed an extraordinarily mild type, and that not only in one but in many towns it has prevailed to a considerable extent, and yet has caused scarcely any mortality.

As a matter of fact, no such deduction can be drawn, since, as the late Sir John Simon pointed out in his report for 1875, and in relation to the wide extent and terrible severity of the epidemic of smallpox which prevailed in this and other countries from the autumn of 1870 to the spring of 1873, "a generalization which from the earliest times has been familiar to the medical profession is that the same diseases at different periods of time produce epidemics of widely differing degrees of malignity."

The following further remarks of Mr. Spencer, which he quotes, appear to us greatly open to question:

"It is a familiar biological truth that the organs of sense and the teeth arise out of the dermal layer of the embryo. Hence abnormalities affect all of them; blue-eyed cats are deaf and hairless dogs have imperfect teeth. The like holds of constitutional abnormalities caused by disease. Syphilis in its earlier stages is a skin disease. When it is inherited the effects are in deformities of teeth, and in later years iritis. Kindred relations hold with other skin diseases: instance the fact that scarlet fever is often accompanied by loosening of the teeth, and the fact that with measles often go disorders sometimes temporary, sometimes permanent, of both eyes and ears. May it not be thus with another skin disease—that which vaccination gives?"

Now we are not prepared to admit that syphilis in its earlier stages and scarlet fever are skin diseases. The initial lesion and secondary symptoms of the first and the eruption in the case of the other, far from being such in the proper sense of the word, are local manifestations of the constitutional state. Moreover, the fact that inherited syphilis is often accompanied by lesions of the bones and viscera, is altogether ignored. Were it possible to prove that traumatic injuries of the skin such as those caused by burning by fire or caustic, or severe abrasions during early months, could produce injurious effects so far as the teeth are concerned, there might be some justification for attributing a similar effect to vaccination, notwithstanding that the local lesion produced is hardly a skin disease. Later it is noted that "honeycombed" teeth are practically always associated with some derangement of health in early life, and that this is particularly true with regard to what are described as "skin diseases," but the fact is not mentioned that, in the opinion of Mr. Jonathan Hutchinson and the late Mr. Henry Moore among others, the most pronounced specimens of the "honeycombed" variety are always due to the free administration of mercury in infancy.

Although we have not been able in the compass of this article to deal with every point raised, enough has been said, we think, to show that the conclusions of the author are not altogether justified, and that little attention need be paid to the "bogey" he has raised.—
Editorial in Dental Surgeon.

THE PRODUCTION OF PLATINUM IN 1905.

The year 1905 saw a phenomenal rise in the price of platinum and a greatly increased production in the United States. The annual report of the United States Geological Survey on the production of platinum, prepared this year by F. W. Horton, contains details of exceptional interest. It shows that early in March, 1905, the price of ingot platinum advanced from \$19.50 an ounce to \$21 an ounce, surpassing gold in value. On April 1, 1905, the price fell to \$20.50 and remained firm at this quotations until February 1, 1906, when it jumped to \$25 an ounce, where it remained until September 1, or about six weeks ago, when it leaped to the unprecedented value of \$34 an ounce. Mr. Horton's report also shows that the production of platinum in the United States increased from 200 ounces in 1904 to 318 ounces in 1905.

The rise in the price of platinum and its increased production in this country may be ascribed to two causes: the growing demand for the metal and the reduced yield of the Russian platinum placers, which usually furnish about ninety per cent of the world's supply.

The anxiety felt by the platinum dealers during the Japanese-Russian war has not abated since the settlement of international difficulties, but has rather increased as Russia's internal dissensions have developed. Even before the uprisings, it is said, the large Russian mines were purposely curtailing their production. This reduction of the output is due to the fact that the entire product for a varying term of years was bought up under contract and at prices that now seem ridiculously low. As the mine owners receive only the fixed price, they do not participate in any gain due to rise in value, and are, therefore, not desirous of a large production, but are husbanding the limited resources of their mines until such time as they can dispose of their product to better advantage. Meanwhile the small mines, which, generally speaking, are not hampered by such agreements, are working to their full capacity to take advantage of the stimulated prices; but their entire output is only a small percentage of what is usually produced. A greatly increased consumption of platinum in the electrical and chemical industries, together with this stringency of supply, accounts for the prevailing high prices.

The exhaustive tests and examinations of black sands commenced early in 1905 in connection with the Lewis and Clark Exposition, and still being carried on at Portland, Ore., by the United States Geological Survey, have done much toward placing platinum mining in this country upon a stable footing and developing it into a permanent and profitable industry. Not only have many discoveries of platinum in new localities been made, but the tests have revealed the fact that there are in this country districts which contain surprising quantities of platinum, and they have also given much valuable data as to the best method of obtaining it.

Platinum is now known to exist in fifteen counties in California: Butte, Calaveras, Del Norte, Humboldt, Mendocino, Nevada, Placer, Plumas, Santa Barbara, San Luis Obispo, San Bernardino, Shasta, Siskiyou, Trinity and Yuba; in nine counties in Oregon: Baker, Coos, Curry, Douglas, Jackson, Josephine, Lincoln, Linn and Union; in eight counties in Idaho: Ada, Bingham, Boise, Elmore, Idaho, Nez Percés, Oneida and Shoshone; in four counties in Colorado:

Chaffee, Park, Saguache and San Miguel; in three counties in Washington: King, Skagit and Whatcom; in two counties in Montana: Custer and Granite; in Utah, in Garfield county; in Arizona, in Yavapai county, and in Wyoming, in Albany county. The metal is also rarely found in Alaska and in the gold-bearing sands of Corozal river, Porto Rico. Isolated occurrences of single nuggets or mere traces of the metals have been found in many other counties of these states, as well as in four of the eastern states, namely: New York, Pennsylvania, North Carolina and Georgia. In many of these localities the metal occurs but sparingly. The most promising fields are in the counties of southern Oregon and northern California. Here the metal has been found in commercial quantities. With proper methods a considerable annual output should be obtained.

The platinum metals are usually found in working gold placers, especially where the gravels are derived from peridotites. Many managers of placer mines have been convinced for a long time that it would pay to save the platinum in the gravels, if it could be done by some inexpensive method. The experiments of the Geological Survey which were conducted under the supervision of Dr. David T. Day, have shown conclusively that ninety-five to ninety-eight per cent of the precious metals, both gold and platinum, contained in the sluice box sands, can be saved on concentrating tables of the Pinder or Wilfley type, such as are used in every-day practice; and that in most cases the concentrates thus obtained will represent less than one per cent of the total weight of sand fed to the table.

Besides discussing the experiments made in the recovery of platinum in this country, Mr. Horton describes the methods of extraction in vogue in Russia.

It should be noted that the imports of platinum during 1905 were valued at \$2,173,263, as against \$1,879,155 in 1904, an increase in value of \$294,108. Considering the increased demand for platinum, the gain in importation is slight, but if the high price and scarcity of the metal be taken into account the wonder is that there was not a large decrease in the quantity imported.

This report of Mr. Horton's is published as an advance chapter of the annual volume, "Mineral Resources of the United States, 1905," and is distributed free of charge on application.—*New York Electrical Review*.

**NECROSIS OF THE RIGHT INFERIOR ALVEOLAR PROCESS
WITH TREATMENT AND CURE.**

BY G. WALTER HINDMARSH, D. D. S., NEW YORK CITY.

On June 6, 1905, Mrs. C., aged 45, upon the advice of her physician, presented herself at my office for examination and treatment, the case being one of necrosis of the right inferior alveolar process. Examination of the oral cavity revealed a quantity of pus which was being discharged from what appeared to be the site of a recently extracted tooth. This, however, Mrs. C. assured me, was not the case. I also found a cloaca or fistulous opening under the shin, a little to the right of the median line, from which there was also a like discharge of a very fetid odor. According to the patient's statement, this condition had existed several months, and although under treatment, the symptoms continued to increase in severity until the attending physician, concluding that further effort on his part would be useless, referred the case to me as being more within the province of the dentist than of the physician.

Upon a close investigation I discovered a small opening, through which I introduced my probe, and could feel a piece of bone, covering an extended area, which caused the patient great pain. Washing out the fistula with a little tepid water, in order to cleanse away the pus and obtain a clearer view, I made an attempt to dislodge this necrosed bone, but owing to the pain it caused the patient and the resistance offered, I desisted and washed out the tract with a mild solution of H_2O_2 , which I followed with one of glyco-thymoline. This was accomplished with a long pointed syringe and repeated three times a week. It soon became evident that the bone was becoming quite loose, so making a small incision along the alveolar ridge, I removed a piece of necrosed bone of even greater size than I had expected. After thoroughly irrigating the canal with glyco-thymoline in 50% strength, I instructed the patient the method of doing this and prescribed for her a proper syringe and directed her to irrigate the canal thoroughly two or three times a day. This she succeeded in doing in an extremely creditable manner for a week, when she returned for further examination. While making this I became aware of the existence of another piece of bone, which, like the former, was too deeply imbedded for removal without first making an incision.

This I proceeded to do at a point a half inch to the right of the former, it having healed under the influence of the glyco-thymoline applications. This last piece of bone being readily removed, the fistula was washed two or three times daily with full strength glyco-thymoline. This was continued for a matter of ten days or two weeks, when the repair of the entire canal was effected by granulation, the only external evidence of its existence being a small pit at the point of discharge, which, unless the head is thrown back, can not be detected, as it is well hidden by the chin.

The success attending the use of glyco-thymoline in this case prompted me to earnestly advise my brother practitioners to pin their faith to this preparation should a case of this nature or any other demanding the use of an antiseptic occur in their practice.

THOUGHTS ON PORCELAIN.*

BY DR. J. ALLEN SMITH, COLORADO SPRINGS, COLO.

So much has been said and written on the subject during the past few years that perhaps I should call this short paper a review of porcelain. Yet, after all this, and in the face of results not obtainable with any other material, we hear men of recognized ability in the profession decry the use of porcelain.

It is hard, I admit, for men who have for years measured the merits of other filling materials by the "gold standard," to have a new standard, with a ratio even lower than "16 to 1," force itself into their practice, requiring renewed energy and hours of experimental work.

ADVANTAGES OF PORCELAIN.

Had these same men, after a few unsuccessful attempts at gold fillings, become discouraged dentistry would have lost some of its best operators. What matter if in our early efforts we do have failure? Suppose we do have an inlay come out once in a while? The principle is right—we are using the best tooth preserver at our command. We are using a material that will protect the enamel from fracture, the dentine from decay, and the pulp from irritation.

*Read before the Colorado State Dental Association, Denver, Colo., June, 1906.

Porcelain is compatible with tooth structure, durable, a non-conductor of thermal changes, neutral, no electro-chemical action on dentine, artistic in effect. These are some of the points of superiority over other materials for the preservation of tooth structure—a much coveted result before the days of porcelain, now realized far beyond the expectations of the most sanguine.

RETENTION.

The retention of an inlay depends a great deal on the depth of the cavity. To carry a matrix into a deep cavity without tearing is a difficult and delicate operation. You will find a very thin strip of linen wrapped around the tooth and over the cavity, forming a cradle against which to burnish the platinum, to be a great aid in preventing final burnishing. By the use of vulcanite, tape, rubber dam and it from drawing over the edge of the cavity—removing it before the of heat required to fuse porcelain. For instance, a porcelain said to

If we would produce an inlay that will stand the stress of mastication in molars and bicuspid, we must spend more time and care in baking. To obtain the maximum strength in an inlay, each layer of porcelain must be brought to a biscuit at a low temperature, never bringing it to a glaze until the last baking, as each re-fusing will over-fuse the original layers, reducing its strength and burning out the color.

MATCHING COLOR.

If we would attain the highest artistic effect, we must study the individual tooth with its varying shades; study the whole arch collectively as the artist studies the landscape; observe its lights and shadows—touching here and there upon the canvas with varying shades, producing a perfect harmony.

It is not necessary, nor is it possible, to produce the exact shades found in an individual tooth. Better effects can be produced by combining two or three shades in an inlay than with one solid color, even though they do not correspond to the shades found in the tooth.

It has been said that the tooth will in time change color, leaving the porcelain to appear as a patch. That the teeth do change in color there can be no doubt. Say from the age of twenty to forty or fifty, there is a decided change, but if we found it necessary to change the

porcelain in that time—which would be a rare occurrence—still we can say that it did better service than the average metal filling.

We have been taught to believe that the hardness of porcelain is a point in its favor as a filling material. I have sometimes thought that perhaps its hardness will prove its undoing, especially in occlusal surfaces. We find in all mouths more or less mechanical abrasion of the teeth, causing the inlay to protrude beyond the margin of the cavity. This I have observed in several cases that have returned to me a year or so after the inlay was inserted. The use of carbon paper will show an increased pressure on the inlay, producing a dislodging force that will displace or fracture it. This may be overcome by seeing the patient, say once a year, and slightly grinding the point of contact.

CEMENTATION.

I believe failures in inlays are often due to imperfect cementation. In cementing an inlay, every step must be taken with the greatest care. Nothing is stronger than its weakest point, and this is the weak part of an inlay.

Thoroughly spatulate your cement, prepare the cavity and inlay with great care and set under moderate pressure. I say moderate pressure because inlays are often fractured by too great pressure while the cement is soft, an accident which perhaps may not be discovered till later.

If in an approximal cavity, a piece of separating rubber will produce an even and constant pressure on the inlay. In other cavities a piece of soft wood may be used and held with gentle pressure while the cement is setting.

Some manufacturers are making inlay cements to correspond to the colors on the shade guide of the different porcelain bodies, which is a great help in selecting the required shade of cement.

THE PORCELAIN JACKET CROWN.

In many cases I believe we could get better results with the all-porcelain jacket crown. Here we have an ideal crown; no metal to endanger the vital structure of the tooth or to destroy the translucency of the porcelain; no irritation to soft tissue, no post to weaken the root. In fact, one homogeneous mass—porcelain, cement, tooth—combining utility, durability, cleanliness, artistic effect, with the least possible destruction of tooth structure.

And now, gentlemen, in closing, let me say that porcelain has come to stay. Its use may be more limited than we now think, but it has its place in dentistry, and there is a great deal of hard work ahead for the so-called "porcelain cranks."—*Items.*

THE FIRST PERMANENT MOLARS.

If these four keystones or pillars to the dental arches are normally arranged at the period of their development, they support the jaws during the shedding of the temporary teeth and their replacement by the permanent ones, and we are almost certain that all the other molars posterior to these will be correctly arranged.—*E. A. Bogue, International Dental Journal.*

DENTAL CLINICS FOR SCHOOL CHILDREN.

At a meeting recently held at Bellevue Hospital, Manhattan, was read a letter from the New York Association for Improving the Condition of the Poor, asking Dr. John W. Brannan if it would not be possible for Bellevue and allied hospitals to give efficient dental care to the school children of the city. The matter, after considerable discussion, was referred to a committee, which will investigate the need and expense of establishing a dental clinic. The need is widespread, as is understood when one realizes that 55,300 school children were examined from March to December last year and 18,000 were found to have defective teeth. The percentage of children needing dental care was doubtless greater, as a medical examiner frequently fails to discover conditions that a dentist would see. The doctors in the Board of Health are greatly in favor of dental care for the school children, but all feel that it must be done under legitimate supervision. They claim that dental care is every bit as necessary as vaccination and the precautions taken against tuberculosis. The same doctors know that in many cases of aching teeth brought to the attention of physicians in medical clinics extractions are made when by proper care the teeth could be saved.—*Brooklyn Union.*

MEETINGS

NATIONAL SOCIETY MEETINGS.

Indiana State Dental Association, Indianapolis, June 11, 12, 13.

National Association of Dental Examiners, Minneapolis, Minn.,
July 26, 27, 28.

National Dental Association, Minneapolis, Minn., July 30.

Institute of Dental Pedagogics, New Orleans, December 30 to
January 2, 1908.

STATE SOCIETY MEETINGS.

Alabama Dental Association, Birmingham, May 14, 15, 16, 17.

Arkansas State Dental Association, Eureka Springs, May 29,
30, 31.

Connecticut State Dental Association New London, April 16, 17.

Georgia State Dental Society, Atlanta, May 7, 8, 9, 10.

Illinois State Dental Society, Quincy, May 14, 15, 16, 17.

Iowa State Dental Society Cedar Rapids, May 7, 8, 9.

Maine Dental Society, July 16.

Minnesota State Dental Association, Minneapolis, July 30, Aug. 3.

Mississippi State Dental Association, Meridian May 28, 29, 30.

Montana State Dental Society, Helena, April 12, 13.

Nebraska State Dental Society, Lincoln, May 21, 22, 23.

New Jersey State Dental Society, Asbury Park, July 17, 18, 19.

New York State Dental Society, Albany, May 10, 11.

Vermont State Dental Society, Burlington, May 15.

Virginia State Dental Association, Jamestown, Sept. 10, 11, 12.

Wisconsin State Dental Society, La Crosse, July 16, 17, 18.

INSTITUTE OF DENTAL PEDAGOGICS.

The executive committee selected New Orleans for the fifteenth
annual convention, and December 30, 1907, and January 1 and 2,
1908, the dates.

ARKANSAS STATE BOARD.

The Arkansas State Board of Dental Examiners will hold exam-
inations at Eureka Springs, May 27, 28, 1907. A. T. McMillin, sec-
retary, Little Rock. The Arkansas State Dental Association will
hold its annual meeting at Eureka Springs, May 29, 30, 31, 1907.
Henry P. Hopkins, secretary and treasurer.

EASTERN INDIANA DENTAL ASSOCIATION.

The Eastern Indiana Dental Association meets in Anderson, Indiana, May 14 and 15. Good clinics. Good papers. Everybody invited. Everybody who comes is a member. Yours truly,

C. W. ORLAND.

INDIANA STATE DENTAL BOARD.

The next regular meeting of the Indiana State Board of Dental Examiners will be held in the Capitol at Indianapolis, June 11, 12, 13, 1907. All applicants for examination to practice in the state should apply to the secretary for further information, blanks, etc. Applications for examination must be in the hands of the secretary at least five days before the above date.

F. R. HENSHAW, Sec'y.

Middletown, Indiana.

MISSISSIPPI DENTAL ASSOCIATION.

The fourteenth annual meeting of the Mississippi Dental Association will meet in the County Court House in Meridian, May 28, 29, 30. All ethical practitioners of this and other states are cordially invited to attend.

Reduced railroad rates and reduced hotel accommodations will be secured.

For full particulars address

E. DOUGLAS HOOD, Secretary,

Tupelo, Miss.

Mississippi Dental Association.

IOWA STATE BOARD OF DENTAL EXAMINERS.

The Iowa State Board of Dental Examiners will hold its next meeting for examination at Iowa City, June 6, 7, 8, 10, 11, 1907.

To be eligible to this examination the applicant must hold a diploma from a college that is on the accredited list of the National Association of Dental Examiners.

Applicant must state where he attended first, second and third year of college.

Address all communications to

E. D. BROWER, D. D. S., Sec'y.

Le Mars, Iowa.

IOWA STATE DENTAL SOCIETY.

The forty-fifth annual meeting of the Iowa State Dental Society will be held at Cedar Rapids, Iowa, May 7, 8, 9, 1907. A good program is being arranged for. A cordial invitation is extended to the profession.

C. L. TOPLIFF, Secretary.

Decorah, Iowa.

INDIANA STATE DENTAL ASSOCIATION.

The forty-ninth annual meeting of the Indiana State Dental Association will be held at the Claypool Hotel, Indianapolis, June 11, 12, 13, 1907. The executive committee has arranged an unusually interesting program for this meeting. A cordial invitation is extended to the profession to be present.

CARL D. LUCAS, Secretary,
Indianapolis.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of the Illinois State Board of Dental Examiners for the examination of applicants for a license to practice dentistry in the state of Illinois will be held in Chicago, at the Northwestern University Dental School, southeast corner of Lake and Dearborn streets, beginning Monday, June 3, 1907, at 9 a. m.

Applicants must be in possession of the following requirements in order to be eligible to take the examination: (1) Any person who has been engaged in the actual, legal and lawful practice of dentistry or dental surgery in some other state or country for five consecutive years just prior to application; or (2) is a graduate of and has a diploma from the faculty of a reputable dental college, school, or dental department of a reputable university; or (3) is a graduate of and has a diploma from the faculty of a reputable medical college or medical department of a reputable university, and possesses the necessary qualifications prescribed by the board.

Candidates will be furnished with proper blanks and such other information as is necessary on application to the secretary. All applications must be filed with the secretary five days prior to the date of examination. The examination fee is twenty (\$20) dollars with the additional fee of five (\$5) dollars for a license.

Address all communications to

J. G. REID, D. D. S., *Secretary*,
1204 Trude building, 67 Wabash avenue, Chicago, Ill.

MISCELLANEOUS

TO THE READERS OF THE AMERICAN DENTAL.

When selecting teeth of the 20th Century make, look for molds 48, 56, 86, 87, 90, 92, paying especial attention to the shape, size, short lingual cusps, and the amount of porcelain above the pins.

L. P. HASKELL.

TAKING IMPRESSIONS.

A few drops of liquid Sanitol in the water with which plaster is mixed for taking impressions gives a pleasant taste and renders this disagreeable operation less unpleasant.—*W. R. Rohbach, Dental Brief.*

TO REMOVE AN IMPRESSION.

When taking an impression for full superior denture if it is found difficult to dislodge, have the patient to close the lips and blow real hard so as to distend the cheeks and the impression will drop down, no matter how tight it is found.—*R. C. Traynham, Practical Dental Journal.*

(A better way is to remove the impression from the mouth before the strong adhesion is formed.—Ed.)

ADVANTAGE OF THE GOLD INLAY OVER THE PORCELAIN ONE.

The gold inlay has one marked advantage over the porcelain in that the matrix becomes a part of the inlay, giving it an exact fit to the cavity, therefore requiring the minimum of cement.—*Joseph W. Wassall, Items of Interest.*

AN EXTRACTED TOOTH THE PATIENT'S PROPERTY.

Is a tooth that has been extracted the property of the dentist or the patient? The courts in Germany have just decided that the tooth still belongs to the man after it has left his jaw. The dentist contended that a tooth evicted from occupancy with the full consent of its landlord became ownerless and derelict, and as the particular tooth in question was curiously shaped he proposed to keep it. But the patient also wished to have it. And the patient has won.—*Schenectady Star.*

THE TOOTH-PICK.

Whether the use of the tooth-pick is vulgar or not depends on the manner of its use. It has a valuable function and should not be banished from proper use. It is a valuable aid in dislodging impacted food which might injuriously affect the gums, or, if left, undergo decomposition, resulting in offensive odors and dangerous chemical reagents.—*Dental Register*.

HARMONY LINES.

Gentlemen, when you are obliged to make a filling, for whatever reason, and you have decided to make a gold filling, I wish to make a plea for study in harmony in lines, so that the only thing that will violate the esthetic sense will be the contrast in color between the gold and the tooth surface, and that is not always a painful contrast.—*Dr. T. E. Weeks, Dental Review*.

EDGE SHAPE OF CENTRAL INCISOR.

After years of careful comparison I find that almost without any exception, the shape of the face turned upside down is the edge shape of the upper central incisor which belongs to that face. To state this more clearly, I will offer a few illustrations. We will imagine a line drawn across the forehead between the eyebrows, and hair line, and down each side of the face, cutting the crest of the cheek bone to the point of the chin. By inverting this we have the outline of an incisor tooth.—*F. H. Berry, Dentist's Magazine*.

TO REMOVE A MORBID GROWTH OF GUM TISSUE FROM A CAVITY.

Frequently we have cases when a morbid growth of gum tissue fills, or partly fills, a cavity. Its removal is not only somewhat painful, but it is also a mean piece of work to cut it away on account of the excessive hemorrhage. In the majority of such cases it can be removed neatly and with dispatch, painlessly and bloodlessly, by ligating with a piece of silk to either the tooth with the cavity or the adjoining one, whichever is the most convenient. This cuts off the blood supply and reduces to a minimum the pain when cutting away the growth with a side motion of a small flat burnisher or other suitable instrument. If a bad case, touch with trichloroacetic acid. For those who have not tried this method of removing this troublesome growth the result will be surprising.—*Dental Office and Laboratory*.

CONSPIRACY TO DECEIVE PUNISHED.

Philip H. Senior and Fred W. Herr pleaded guilty before Judge Wiltbank yesterday of conspiracy to deceive the State Dental Board in an examination for a certificate to practice as a dentist in Pennsylvania. They were each fined \$150 and costs of court. Herr passed the examination by the State Board last May, but Senior failed. In December Herr, for a consideration of \$300, impersonated Senior in an examination and passed. But the deception was speedily detected by Dr. Harry McFadden, chairman of the State Board, who had the men arrested.—*Philadelphia Ledger*.

THE STEP ANCHORAGE AND ITS INDICATIONS.

We are seldom if ever justified in placing a filling in the approximal surface of a bicuspid or molar where the occluding tooth is in position and the occlusion is normal, without securing it by a step anchorage cut at a right angle to the pulpal wall into the occlusal fissure. If this is done, and the step is cut sufficiently broad and deep, making that portion slightly broader at the end farthest from the cavity, there will seldom be any movement of the filling in the cavity, but care must be exercised in preparing the step to make it sufficiently deep and broad to insure sufficient filling material to prevent its stretching or breaking by the force of occlusion in the course of mastication.—*J. F. Wallace, Dental Era*.

FLIES AND TUBERCULOSIS.

Dr. Frederick T. Lord, of Boston, reports in the *Clinical Contributions* of the Massachusetts General Hospital, for February, a series of experiments to demonstrate the rôle of flies in the dissemination of tuberculosis. His conclusions are (1) that flies may feed on tubercular sputum and excrete living bacilli which remain virulent for two weeks, or longer. (2) That human beings are in danger from eating food defiled by fly specks. If these fly specks are mechanically disturbed they may infect the air with tubercle bacilli.

He suggests that all tubercular material should be carefully protected from flies, that rooms and hospital wards containing tubercular patients should be well screened during fly season, and that all food-stuffs should be well protected from flies to guard against possible infection.—*Dietetic and Hygienic Gazette*.

PERSONAL AND GENERAL

Wm. T. Barton, a dentist of Pilot Grove, died at Iola, Kas., recently.

J. S. Thompson, a dentist at Atlanta, is dead. He was fifty-seven years of age.

J. A. Lee, a dentist at Chattanooga, Tenn., was found dead in his room. He was unmarried.

H. R. Foster, a dentist of New Ulm, Minn., died March 4. He was fifty-four years of age.

Edward Elson, a dentist, formerly residing at Auburn, is dead at his home in Canton, Ohio.

Dr. Eugene J. Hausle, a dentist at Buffalo, died March 13. He was thirty-six years of age.

F. S. Longdon, a traveling dentist of Chicago, committed suicide in a hotel at Clearmont, Wyoming.

D. J. Phillips, a dentist of Vincennes, Ind., died at Indianapolis February 26.

Fire:—**Dr. I. H. Read's** dental office at Fulton, Ky., was ruined by fire. The doctor carried \$1,000 insurance.

Rock River Dental Association held a meeting March 5. About twenty-five members of the association were in attendance.

Fire in Dental Depot:—**A. C. Clark & Co.** suffered a loss by fire, smoke and water to the extent of \$1,000 March 17.

Walton-Redding:—**Dr. J. G. Walton**, of Cincinnati, and **Miss Maud Redding**, of Glasgow, Ky., were married at Glasgow recently.

G. V. Black's Dental Club held its midwinter meeting at St. Paul, February 26, **Dr. G. V. Black** being the guest of honor.

Fire:—**Dr. A. H. Barber's** dental office at Deshler, Ohio, was destroyed by fire. The loss was \$700, which was covered by insurance.

James Goodwillie, a dentist in New York city, died March 2. He was thirty-three years of age and was a graduate of the Pennsylvania College of Dentistry.

H. C. Rees, an American dentist of the City of Mexico, has been charged with being responsible for the death of a young American woman. She died in his office.

K. S. Morgan, a traveling dentist, is accused by government officials with having passed counterfeit dollars at Olivia and St. Michael. He is in jail at Minneapolis.

Fox River Valley Dental Society held its sixth annual meeting at Appleton, Wis., March 13. License between states was the principal subject discussed.

D. A. Parrish, a dentist at Louisville, Ky., died recently of tuberculosis. He was twenty-eight years old and was a graduate of the Louisville College of Dentistry.

C. M. Newton, a dentist at San Antonio, Tex., is dead. He was thirty-two years of age and was a graduate of the Vanderbilt Dental College at Nashville, Tenn.

Dentist Honored:—Prof. W. D. Miller, of Ann Arbor, has been appointed privy medical councillor to the Emperor of Germany. He is the first of his countrymen to be so honored.

Chicago Dentist Gets Judgment:—A verdict of \$228 against Prince and Princess Nicholas Engalitcheff and in favor of Lee K. Stewart, a dentist, was returned by a grand jury March 12 for dental services.

E. K. Club Wedelstaedt Dental Club of central New York held its first annual meeting March 8, electing the following officers: President, J. S. Hall; John S. Benz, secretary and treasurer.

Detroit Meeting:—Three hundred dentists attended the twenty-fifth annual clinic of the Detroit Dental Society. The guest of honor at the banquet was Dr. C. N. Johnson, of the Chicago College of Dental Surgery.

Henry A. Cherry, a dentist at Baltimore, has been sued by a young lady of Newark, N. J., for \$400 which she claims to have loaned him while he was a student in college. She claims they were to have been married.

Lady Dentist Wins:—Dr. S. Holmes, a lady dentist of Tilsonburg, Ont., has been given the right to practice by the Ontario legislature. She has been in practice for several years, but had never taken the examination.

Fire.—On the morning of March 4th a fire practically destroyed the manufacturing end of the business of Kress & Owen. They had, however, a duplicate plant in storage and after four days and nights of continuous work were again turning out Glyco-Thymoline.

Robberies:—Drs. DeLong & Miller, Allentown, Pa., loss \$40; Dr. W. W. Westmoreland, Columbus, Miss., loss \$150; Dr. D. D. Griffin, Columbus, Miss., loss \$70; Dr. M. A. Becker, Lancaster, Pa., loss \$150; Dr. J. O. Crenshaw, Fort Worth, Tex., loss not given.

Dentist an Inventor:—Dr. P. H. Leffell, a dentist at Dayton, Ohio, and L. E. Steele, a railroad engineer, have invented a device which promises to be of great service to the railroads and the traveling public. It is a device by which switches and block signals can be operated from a moving train.

Army Dentist:—Dental Surgeon Franklin F. Wing, United States army, and his assistant, Private First Class S. A. Holt, hospital corps, United States army, arrived at Cheyenne, Wyo., March 7. Surgeon Wing will be stationed there for such time as his services may be needed, not exceeding twenty days, after which time he will return to Fort D. A. Russell, Wyo., his proper station.

Removals:—Drs. C. A. Howland, from Shortsville, N. Y., to Palmyra, N. Y.; Harry Green, from West Plains, Mo., to Paragould, Ark.; M. Pringle, from Carson City, Mich., to Alma, Mich.; M. E. Bryan, from Topeka, Kas., to St. Louis, Mo.; Wm. Mitchell, from Rumford Falls, Maine, to Waterville, Maine; E. H. Price, from Lynn, Ind., to Montrose, Colo.; R. G. Haas, from Evansville to Seymour, Ind.; H. C. Bloodworth, from Charleston, Miss., to Biloxi, Miss.; G. T. Moore, from Mt. Morris, N. Y., to Plainfield, N. Y.; R. L. Lamphere, from Henning, Minn., to Staples, Minn.; G. H. Bolten, from Milwaukee, Wis., to Ripon, Wis.; O. F. Bohman, from Forreston, Ill., to Wakeeney, Kas.

DENTAL PATENTS

Figure 1.

836,601. Dental Tool. John E. Argue, Red Lake Falls, Minn. Filed August 28, 1905. Serial No. 276,108. Claim.—1. The herein-described dental tool comprising two coacting members, movable one toward the other, one member having a non-yielding, non-corrosive body formed with perforations for the outlet of mercury, and the other member having yielding or flexible bodies for surrounding and compressing the amalgam and expelling the mercury therefrom.

Figure 2.

834,899. Dental Handpiece. Wallace W. Freeman, Norfolk, Va. Filed August 22, 1905. Serial No. 275,235. Claim.—1. In combination with a dental handpiece, an electric motor, a shaft driven by said motor passing through said handpiece having an armature thereon, a shell having a plurality of exterior pockets therein and covering said motor, a plurality of removable field-coils, a notched V-shaped ring core or pole piece for each coil, said cores forming a part of a ring, a resistance-coil in said shell, and means carried by the said handpiece for controlling said resistance.

Figure 3.

838,296. Dental Work. Harrison D. Best, Pittsburg, Pa. Filed January 29, 1906. Serial No. 298,497. Claim.—1. The combination in a tooth-crown of a porcelain body, a strengthening-ring seated within the body and a metal tube baked into said body, and having an open outer end, substantially as described.

Figure 4.

836,967. Dental Mirror. Walter H. Grant, Boston, Mass. Filed March 14, 1906. Serial No. 306,069. Claim.—1. In a dental mirror, the combination of a tooth-clamp having opposing spring-pressed tooth-engaging portions, a mirror-frame having an interengaging portion adapted to be clamped between said spring-pressed portions, and a mirror supported by said frame.

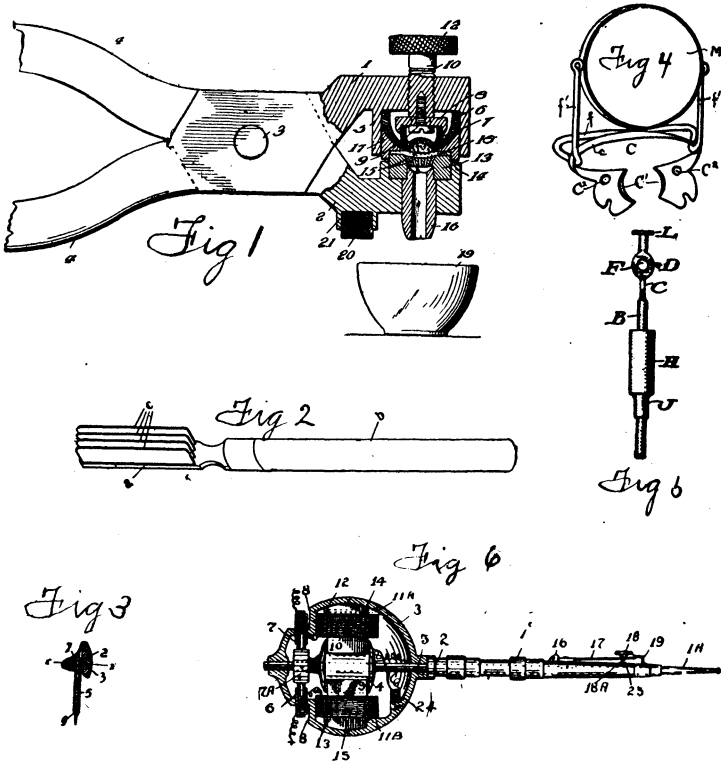
Figure 5.

835,628. Instrument for Softening Dental Trial-plates. Joseph Miller, Bexhill, England. Filed July 30, 1906. Serial No. 328,455. Claim.—1. An instrument for use in softening the ridges of trial dentures and

the like, comprising a back plate and a handle attached thereto, and metallic projections attached to said back plate and adapted to be heated and used for softening the denture.

Figure 6.

826,818. Dental Tool. James H. Abbott, Philadelphia, Pa. Filed December 14, 1905. Serial No. 291,692. Claim.—1. A dental tool consisting of a stem having openings extending there through at an angle to each other and a sleeve movable on said stem.



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Office lease and fixtures, \$150.00. Address D., care of AMERICAN DENTAL JOURNAL.

WANTED.

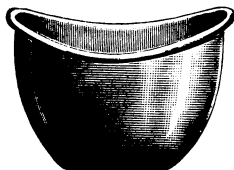
A good man to do crown and bridge work and operate. Married man preferable. Steady work. Dr. Van Sant, Peoria, Ill.

FOR SALE.

Dental outfit and practice in northern Iowa. Invoice price of outfit. Doing over \$2,000.00 a year. No competition. Prices excellent. Address M. F. H., care of AMERICAN DENTAL JOURNAL.

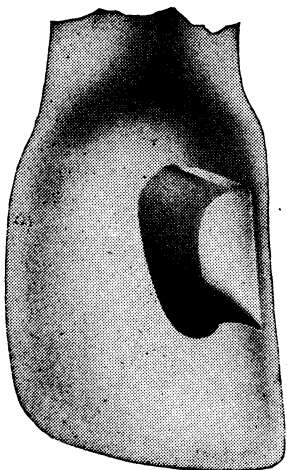
A STERILE EYE BATH.

An eye bath fashioned from a single piece of aluminum has been introduced by the Kress & Owen Company. That this little device will be well received by the medical profession is not to be questioned when one considers the many points of advantage this metal cup has over the old style glass contrivance. It is cleanly, unbreakable and can be sterilized instantly by dropping into boiling water. The surgical bag in the future will hardly be complete without one of these cups, which will give happy results in many an emergency. It will be found invaluable for treating Ophthalmia, Conjunctivitis, eye strain, ulceration and all inflammatory conditions affecting the eye.

GLYCO-THYMOLINE**EYE BATH**

Directions.—Drop into the eye bath ten to thirty drops of Glyco-Thymoline, fill with warm water; holding the head forward, place the filled eye bath over the eye, then open and close the eye frequently in the Glyco-Thymoline solution.

No pain or discomfort follows the use of Glyco-Thymoline. It is soothing, non-irritating, and reduces inflammation rapidly.

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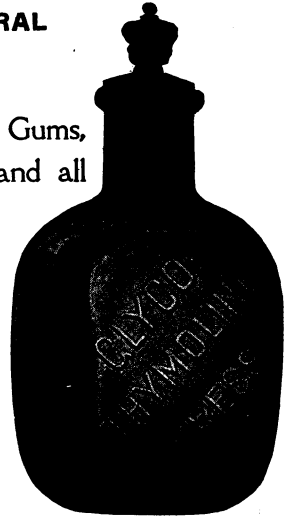
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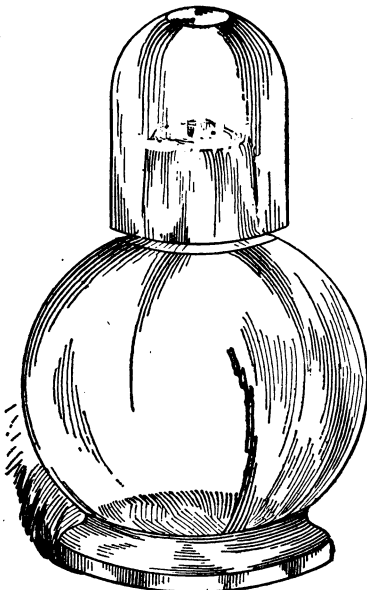
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